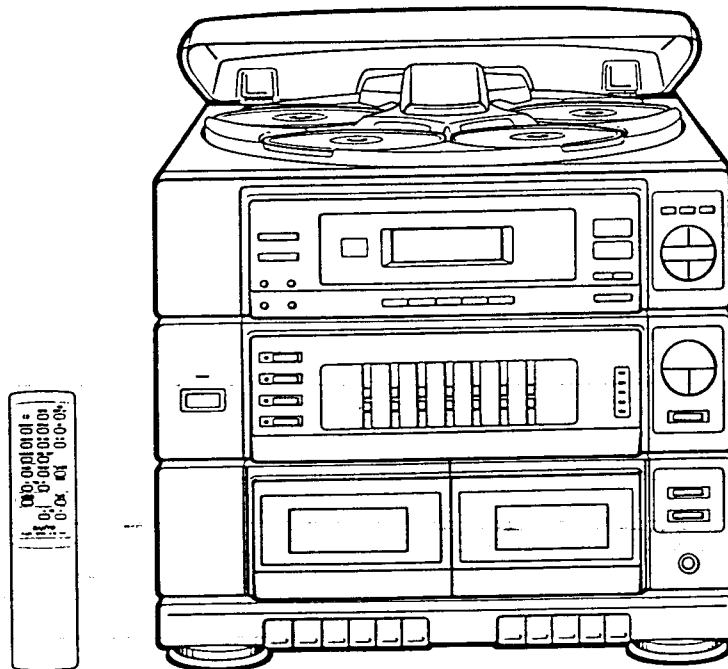


Service Manual

CD Changer stereo Music System

GCD 2700 (AU)



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PRODUCT CODE No.
129 390 02

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SPECIFICATIONS

AMPLIFIER SECTION	
Output power:	12 Watts/ch (10% THD)
Input sensitivity and impedance:	VIDEO 300 mV/50 kohms
Graphic equalizer control:	± 6 dB (100 Hz, 1 kHz, 10 kHz)
Bass expander:	+ 8 dB (100 Hz)
TUNER SECTION	
(FM)	
Frequency range:	87.5 MHz - 108.0 MHz (50 kHz steps)
Usable sensitivity:	20.7 dBf (mono)
(AM)	
Frequency range:	531 kHz - 1,701 kHz (9 kHz steps)
Sensitivity:	800 μ V/m (AM Loop antenna)
CASSETTE DECK SECTION	
Track system:	4-track, 2-channel stereo
Frequency response:	60 Hz - 13 kHz (CrO2)
Signal to noise ratio:	50 dB/58 dB (DOLBY NR OFF/ON)
Wow and flutter:	0.15 % (WRMS)
Tape speed:	4.75 cm/sec
Fast forward and Rewind time:	Approx. 110 sec. (C-60)
CD PLAYER SECTION	
Channels:	2-channel stereo
Sampling frequency:	44.1 kHz
Digital filter:	8 x Oversampling
D/A conversion:	Dual 16-bit linear D/A converters
Pick-up:	Optical 3-beam semiconductor laser
Frequency response:	20 Hz - 20 kHz
Total harmonic distortion:	0.04% (1 kHz)
Signal to noise ratio:	96 dB
Wow and flutter:	Below measurable limits
GENERAL	
Power requirements:	AC: 230 - 240 V, 50 Hz
Power consumption:	50 W
Dimensions (W x H x D):	Approx. 360 x 353 x 399 mm
Weight:	Approx. 8.2 kg
RB-2000 WIRELESS REMOTE CONTROL	
Power requirements:	2 "SUM-3/AA/R6" batteries
Dimensions (W x H x D):	Approx. 41 x 175 x 18 mm
Weight:	Approx. 63 g (without batteries)

IMPORTANT INFORMATION

Because its products are subject to continuous improvement, SANYO reserves the right to modify product designs and specifications without notice and without incurring any obligation.

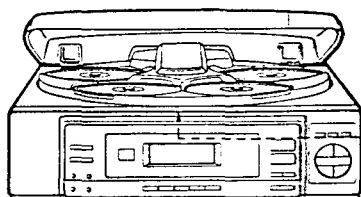
LASER BEAM INFORMATION

(1) A pick-up that emits a laser beam is used in this compact disc player.

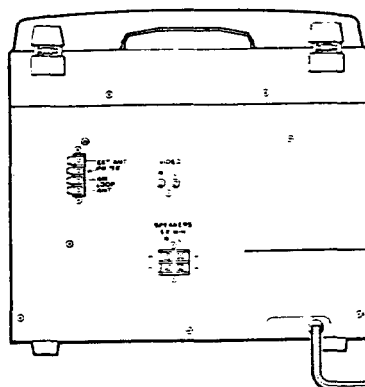
CAUTION - USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER OUTPUT 0.6 mW Max.

DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.



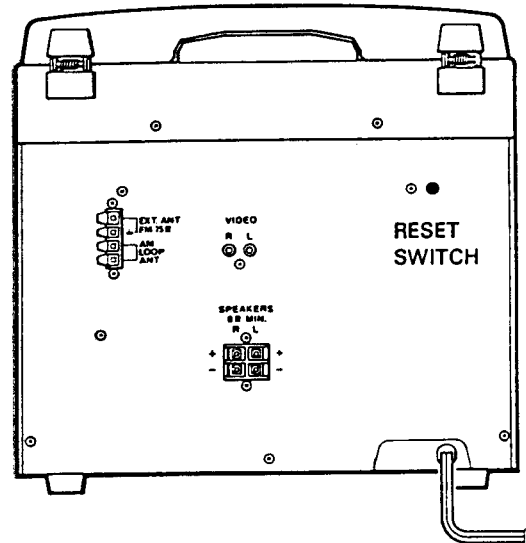
CAUTION-INVISIBLE LASER RADIATION WHEN PANEL OPEN AND INTERLOCK OVERRIDDEN.



**CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLÄITE
KLASS 1 LASERAPPARAT**

OPERATING THE RESET SWITCH

- This model is provided with a RESET switch.
 - The RESET switch serves to clear the contents of the memory in the microprocessor (IC103 UPD75112) which controls the TUNER and CD block.
 - Following the procedure below, press the RESET switch to clear the memory when servicing, or if the key does not register when the TUNER or CD player's operation button is pressed, or if malfunction occurs.
- (1) Disconnect the power cord from the AC outlet.
 - (2) Keep the RESET switch depressed for 60 seconds.
(The backed up electrolytic capacitor is discharged by keeping the RESET switch depressed for 60 seconds.)
 - (3) Re-connect the power cord to the AC outlet.
 - (4) Press the TUNER and CD operations, and check their operation.



CD OPERATION (PROGRAM)

PROGRAMMED PLAY

Up to 32 selections, from up to 5 discs, can be programmed for play in any order.

- The same track or disc can be programmed more than once.

Programming procedure

Follow the example below to program tracks 2 and 6 on DISC 1, track 9 on DISC 2 and all tracks on DISC 3. In this example, each disc has 9 tracks and DISC 3 is in playing position.

1. Press the MEMORY button.
"PROG." blinks on the display.
DISC 3 TRACK AL Pr. 1
PROG. 1 2 3 4 5 6 7 8 9
//
2. Select DISC 1 by pressing the DISK SKIP (or DISC SELECT) button.
DISC 1 TRACK AL Pr. 1
PROG. //
3. Select track 2 by pressing the " >>/>> " button.
DISC 1 TRACK 2 Pr. 1
PROG. //
4. Press the MEMORY button. "PROG." remains lit.
DISC 1 TRACK 2 Pr. 1
PROG. 2
5. Select track 6 by pressing the " >>/>> " button.
"PROG." blinks.
DISC 1 TRACK 6 Pr. 2
PROG. 2
//
6. Press the MEMORY button. "PROG." remains lit.
DISC 1 TRACK 6 Pr. 2
PROG. 2 6
7. Select DISC 2 by pressing the DISK SKIP (or DISC SELECT) button. "PROG." blinks.
DISC 2 TRACK AL Pr. 3
PROG. //
8. Select track 9 by pressing the " >>/>> " button.
DISC 2 TRACK 9 Pr. 3
PROG. //
9. Press the MEMORY button. "PROG." remains lit.
DISC 2 TRACK 9 Pr. 3
PROG. 9

10. Select DISC 3 by pressing the DISC SKIP (or DISC SELECT) button. "PROG." blinks.

DISC 3 TRACK AL Pr. 4
PROG. //

11. Press the MEMORY button. "PROG." remains lit.
DISC 3 TRACK AL Pr. 4
PROG.

- When programming, use the disc select buttons to assign the discs and the <</<< or >>/>> button to assign the tracks.
- The maximum number of selections that can be programmed is 32. If you try to enter more selections, "FULL" will appear on the display.

Checking the program

1. While in the stop mode, press the MEMORY button. The disc, track and program numbers will appear on the display. Press the MEMORY button again to view the disc, track and program numbers for the other programmed selections.
 - These displays do not appear during programmed play.
2. Press the >/00 button to start play. When all programmed selections have played, the player stops automatically.
 - During programmed play, if the programmed track does not exist on the disc, the next programmed selection is played.

NOTE:

- The program is cleared in the following cases:
- When the □ button is pressed in the stop mode

Changing a program

To add a new selection to a program:

1. In the stop mode, press the MEMORY button repeatedly until the following display appears:
".....".
2. Select a disc and track number.
3. Press the MEMORY button.

To change a selection:

1. Press the MEMORY button repeatedly until the selection to be replaced is displayed.
2. Select a disc and track number.
3. Press the MEMORY button.

Operations during programmed play

- Press the <</<< " or " >>/>> " button to skip programmed tracks.
- If the end (or beginning) of the current track is reached in forward (or reverse) search mode, the player enters the pause mode.

CD OPERATION

RECORDING COMPACT DISCS

EDIT RECORDING

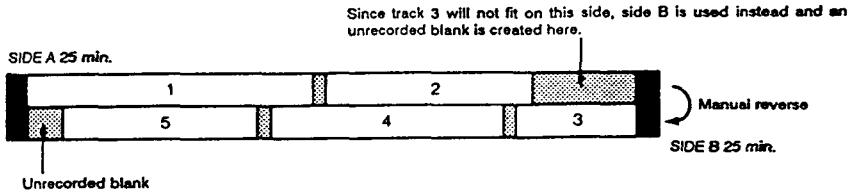
The following edit recording operations can be performed. Selections from multiple discs can be programmed and recorded automatically.

- a) Normal edit recording
- b) Program edit recording
- c) Fade-out edit recording
- d) Backward skip edit recording

a) Normal edit recording

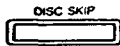
NOTES:

- CD play starts automatically after 8 seconds, so the recording will not be interrupted by the leader tape at the beginning of sides A and B.
- A short blank space is automatically recorded at the end of each track.
- The highest track number which can be edited is 32.



To record a CD with no change in the track sequence, follow the example below.
To record all tracks on a 5-track disc (total play time of 47 min 20 sec) on DISC 2, onto a 50-minute tape:

1. Press the DISC SKIP (or DISC SELECT) button to select the DISC 2.



2. Press the EDIT button to select the recording tape length.



The display indicates:
Disc 2 C-46 EDIT SIDE A
1 2 3 ...

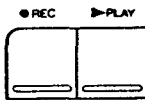
Each time the EDIT button is pressed, the tape length display changes in the following sequence:

C-46 → C-54 → C-60 → C-74 → C-90 → C- → (Cleared)

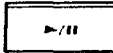
To set the desired tape length up to C-99, use the "◀/▶" or "▶/▶" button. To set "C-50", press the EDIT button to select "C-46" and press the "▶/▶" button 4 times. "C-50" appears on the display.

3. Insert a C-50 cassette tape into the tape deck to record side A.

4. Press the REC button to set the record pause mode for side A.



5. Press the ▶/|| button to start playback with track 1 on disc 2. The deck starts recording at the same time.

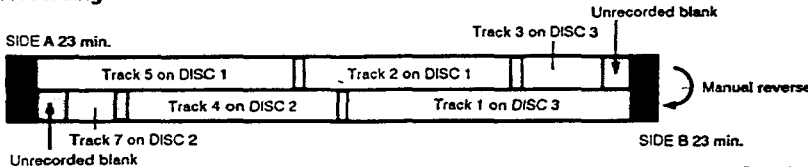


DISC 2 TRACK 1 0.01 EDIT ▶ SIDE A
1 2 3 ...

6. When all of the tracks for side A have finished playing, the player will go to pause mode at the beginning of the track to be recorded onto side B.
7. After the tape deck stops automatically, turn over the cassette and reinsert it.
8. Press the REC button to start recording of side B. The player will start playback with track 3 on disc 2.
9. When all tracks for side B have finished, disc play stops. The tape deck will continue recording to the end of the tape (side B).

The edit mode remains operational when recording ends. Press the □ button to cancel the edit mode.

b) Program edit recording



The desired selections can be rearranged and recorded on the tape within a designated tape length.

Example:

The following tracks are to be recorded.

- Track 5 on DISC 1: 10 min 00 sec
- Track 2 on DISC 1: 7 min 26 sec
- Track 3 on DISC 3: 4 min 37 sec
- Track 1 on DISC 3: 11 min 09 sec
- Track 4 on DISC 2: 9 min 21 sec
- Track 7 on DISC 2: 1 min 10 sec

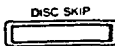
These tracks are recorded in the following order on a 46-minute tape.

- SIDE A:
- Track 5 on DISC 1
 - Track 2 on DISC 1
 - Track 3 on DISC 3
- SIDE B:
- Track 1 on DISC 3
 - Track 4 on DISC 2
 - Track 7 on DISC 2

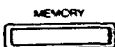
1. Press the EDIT button until "C-46" appears.



2. Press the DISC SKIP (or DISC SELECT) button to select the disc (DISC 1).



3. Press the MEMORY button.



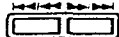
"PROG." blinks and the display indicates:

DISC 1 TRACK AL 23.00 EDIT SIDE A
PROG. 1 2 3 ...
/||

- The remaining time on side A blinks on the time display.

CD OPERATION

- Press the \ll/\lll or \gg/\ggg button to select the track (TRACK 5).



"PROG." remains lit.

DISC 1 TRACK 5 13.00 EDIT SIDE A
PROG. 1 2 3 ...

- Press the MEMORY button.



"PROG." remains lit.

DISC 1 TRACK 5 13.00 EDIT SIDE A
PROG. 5

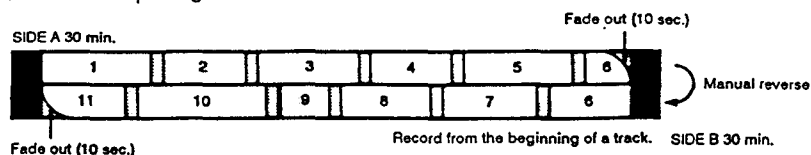
- Repeat steps 2 - 5 to program the tracks to be recorded onto side A.

- If a track which exceeds the remaining time on side A is selected, its remaining time blinks on the display.

When the MEMORY button is pressed, "SIDE B" appears. The remaining time on side B appears on the display. This and subsequent tracks are recorded on side B.

c) Fade-out edit recording

The sound is automatically faded out at the end of sides A and B, according to the selected tape length.



Example:

To record onto a 60-minute tape

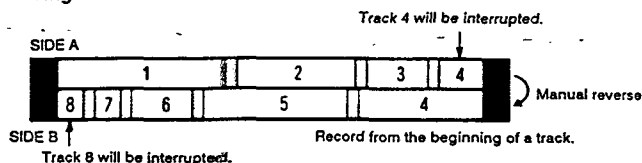
- Press the EDIT button until "C-60" appears on the display.
- Press the FADE button. "FADE" appears.
- Insert a C-60 cassette tape into the tape deck to record side A.
(If you desire, program the tracks. Refer to "PROGRAMMED PLAY" on page 10)
- Press the REC button.
- Press the \triangleright/II button. Recording starts.
The player will start playback with track 1 on side A and proceed in sequence until track 6 is recorded. The display indicates:

DISC 1 TRACK 1 FADE 0.01 EDIT \triangleright SIDE A
1 2 3 ...

- Follow steps "6" to "10" of "Normal edit recording".

- "FADE" blinks as the sound fades out (10 seconds).
- When the remaining tape length is less than 10 sec., the track currently playing is not faded out.
- The sound is also faded out when a track is interrupted at the end of side B.

d) Backward skip edit recording



- Press the EDIT button until "C—" appears on the display.
- Press the REC button.
- Press the \triangleright/II button.
Recording starts on side A with track 1.
- Follow steps "6" to "9" of "Normal edit recording".

MANUAL RECORDING

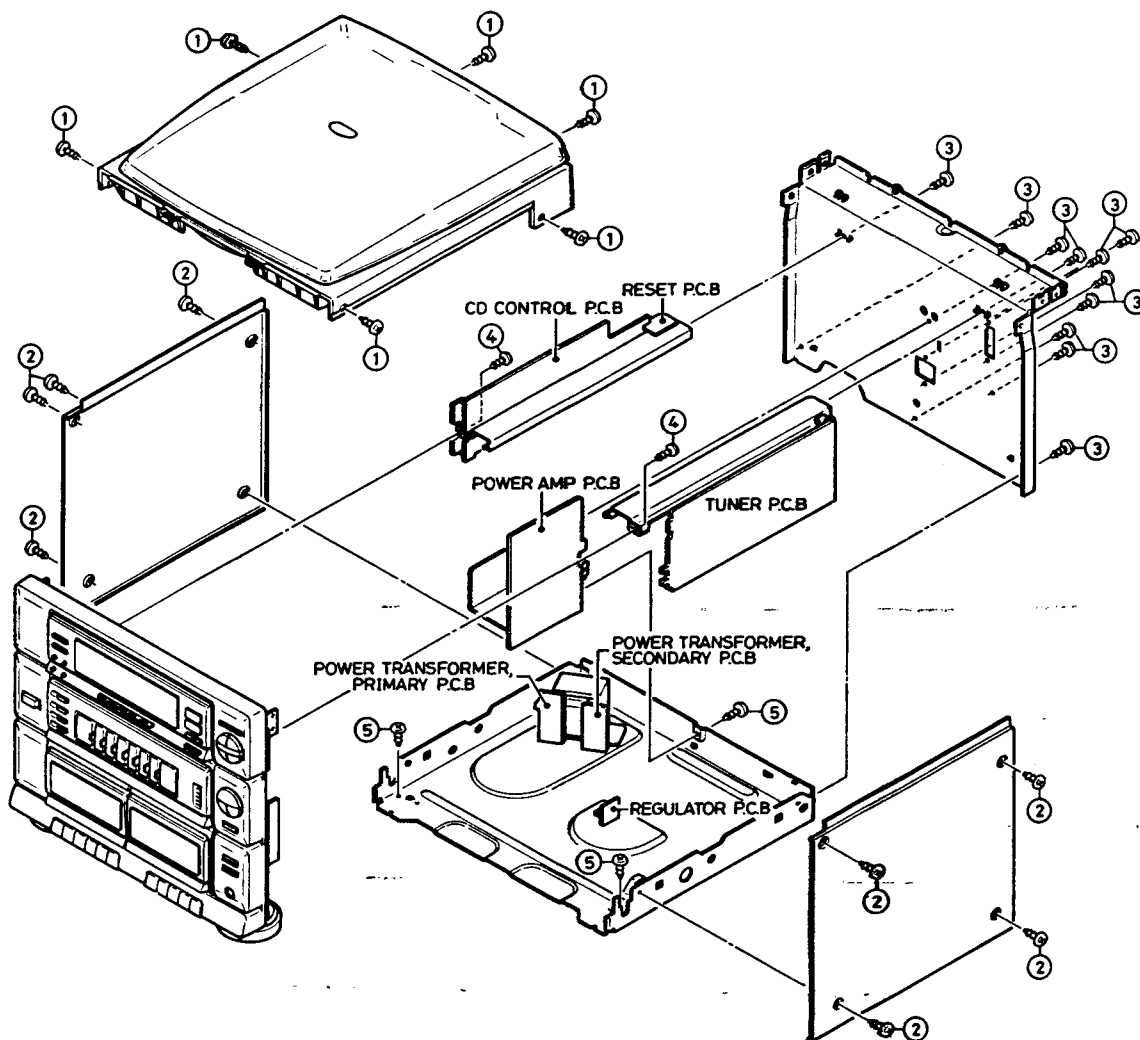
- For programmed recording, program the material in advance (as described under "PROGRAMMED PLAY").
- Press the REC button.
- Press the \triangleright/II button. Recording starts.
- If the FADE button is pressed during recording, the sound begins to fade out from that point (about 10 seconds). The CD player pauses, but the deck continues recording.

REMOVAL AND INSTALLATION

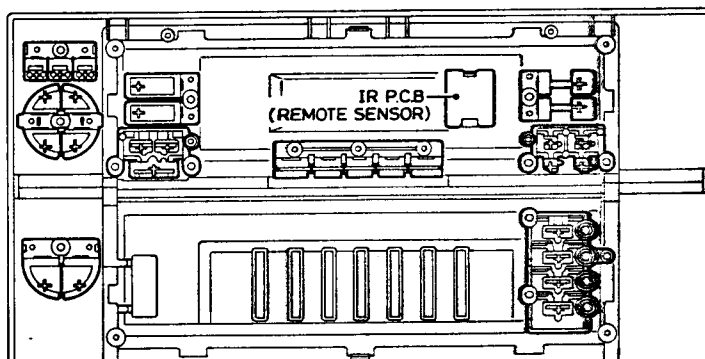
- Disconnect the power cord plug from the electrical outlet.
- All wiring should be returned to the original position after work is completed.
- First have reading many the new FIXERS (614 129 4971) for replacement.

I. REMOVAL OF FRONT PANEL ASSEMBLY

- (1) Remove the 6 CD changer block mounting screws. (①)
- (2) Remove the 8 side panel mounting screws. (②)
- (3) Remove the 11 rear panel mounting screw. (③)



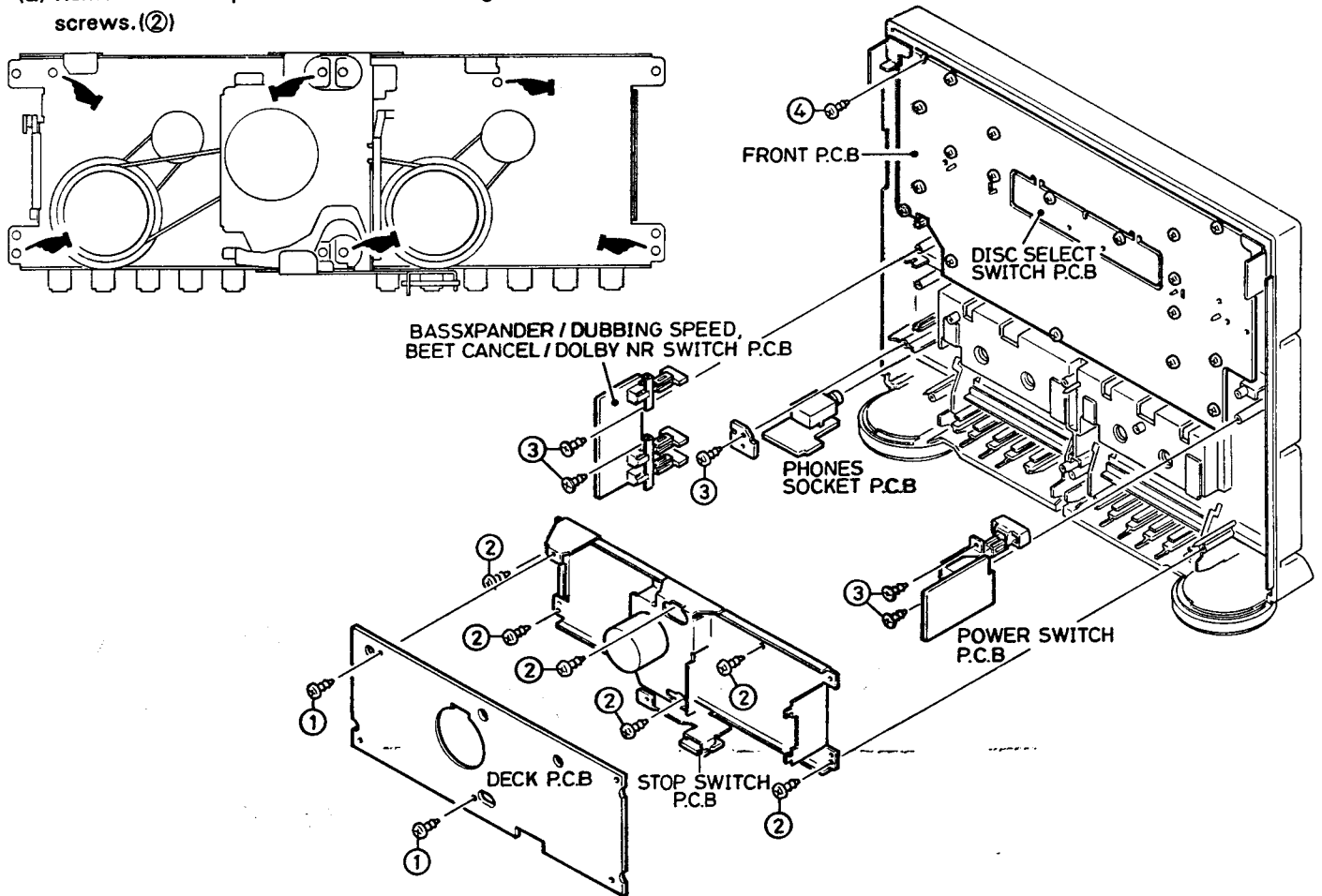
II. REMOVAL OF FRONT PANEL BUTTONS



REMOVAL AND INSTALLATION

c. REMOVAL OF TAPE MECHANISM & P.C.BOARD

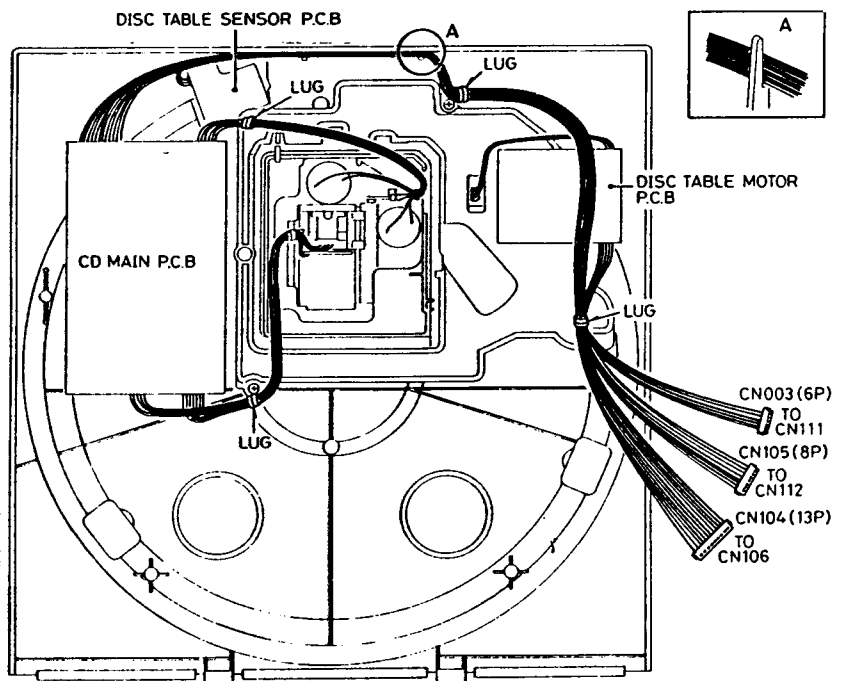
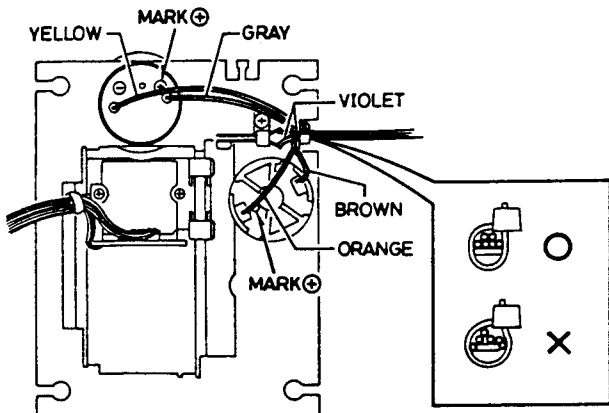
- (1) Remove the 2 tape deck P.C.Board mounting screw.
(①)
- (2) Remove the 6 tape mechanism mounting screws.(②)



d. WIRING LAYOUT

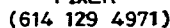
(a) CD MECHANISM BLOCK

- Arrange the wiring as shown in the figure.

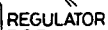


- Arrange the Power cord as shown illustration.

- Arrange the Power cord as shown illustration.



(1) Arrange the lead wire so that they are not near the heat sink of the POWER AMP P.C.Board.



(1) See illustrations.



TUNER ADJUSTMENTS

- Use a plastic screwdriver for adjustment. • Speaker impedance 8 ohm
- Standard Output 50 mW • FM MODE switch STEREO
- TUNING : FM : 87.5 - 108.0 MHz (50 kHz step), AM : 531 - 1701 kHz (9kHz step)

a. FM ADJUSTMENT

BAND SELECT SWITCH : FM

FM ANTENNA : Dummy 75ohm Unbalance

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	IF	Connect sweep generator to TP 211 (H), TP 212 (G)	Connect sweep generator to TP 223 (H), TP 224(G) (V-curve)	10.7 MHz	98.1 MHz	T2201	Max. (V-curve)
2	Detector		(S-curve : not adj.)			----	-----
3	Tuning	-----	Connect to Digital DC voltmeter TP 202 (H), TP 201 (G)	87.5 MHz	Low end	L2104	(1.2 ± 0.1V)
4	Coverage			108.0 MHz	High end	----	(less than 8.5 V)
5	Tracking	Connect to TP211 (H), TP212 (G)	Connect to VTVM, Speaker output	90.0 MHz	90.0 MHz	L2102, L2103	Max.
6				106.0 MHz	106.0 MHz	CT201	
7	0 V	Connect to TP 211 (H), TP 212 (G)	Connect to Digital DC voltmeter TP 203, TP 204 (not Ground)	98.0 MHz (66 dB)	98.0 MHz	T2202	0 V ± 0.05 V
8	VCO (19.00kHz)	-----	Connect to TP206 (H), TP207 (G)	98.0 MHz (66 dB) Modulation : OFF	98.0 MHz	SVR23	19.00 kHz ± 50Hz

b. CHECKING THE AM BAND

SG MODULATION : 1 kHz, 30%,

IRE LOOP ANTENNA

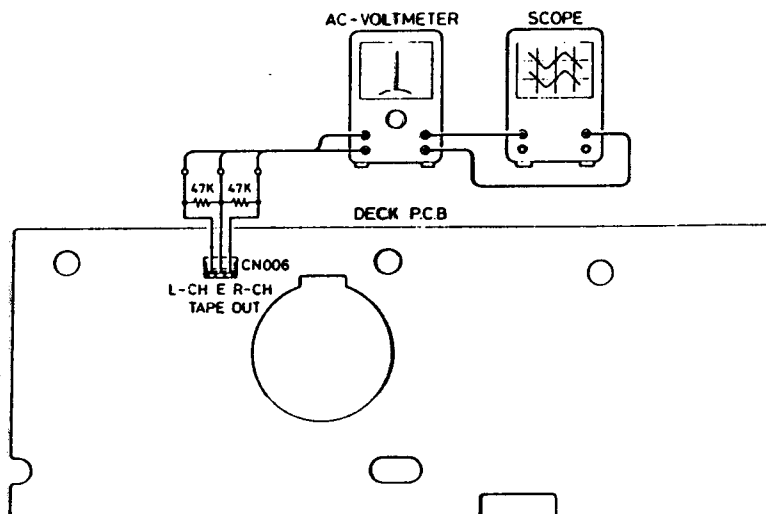
Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	IF	Connect sweep generator to TP 251 (H), TP 252 (G)	Connect sweep generator to TP 208 (H), TP 207 (G)	450 kHz	999 kHz	(CF204)	(CF204 : adjusted)
2	Tuning	-----	Connect Digital DC voltmeter to TP 202 (H), TP 201 (G)	531 kHz	Low end	----	(1.1~1.5 V)
3	Coverage			1701 kHz	High end	----	(less than 8.5 V)
4	Tracking	Connect AM SG to Test Loop	Connect to VTVM, Speaker output	603 kHz	603 kHz	----	-----
5				1404 kHz	1404 kHz	----	
6	SD (Auto stop sensitivity)	Connect AM SG to Test Loop	Connect to Digital DC voltmeter TP 205 (H), TP 207 (G)	999 kHz	999 kHz	----	Checking the voltage 2.0 - 4.0V (at 85dB ± 8 dB)

TAPE DECK ADJUSTMENTS

PREPARATION FOR ADJUSTMENTS

Measuring instruments, tools.

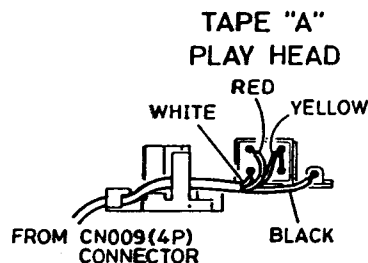
- 1) Test tape
 - MTT-114N (10 kHz)
 - TCW-211 (1,500 Hz) (Optional)
 - MTT-111 (3,000 Hz)
 - TCC-130 (DOLBY TAPE)
 - AC-224 (NORMAL)
 - AC-513 (CrO₂)
- 2) Oscilloscope : (At least 10MHz, dual channel)
- 3) Digital voltmeter (Input impedance 1MΩ or more)
- 4) Automatic distortion analyzer or AC voltmeter (-80dB, input impedance 1MΩ or more)
- 5) AF-oscillator (400Hz, 500mV RMS)
- 6) Frequency counter (5MHz; or more)
- 7) Frequency counter, probe.
- 8) Screwdrivers (non-metallic) for adjustments.
- 9) DC digital voltmeter



I) HEAD REPLACEMENT AND AZIMUTH ADJUSTMENT

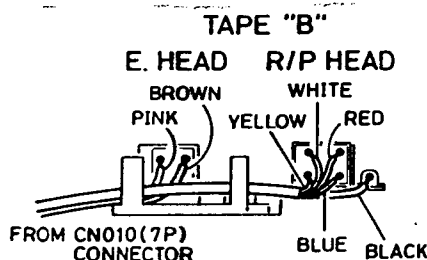
A) Head replacement

1. After replacement, demagnetize the heads by using a degausser.
2. Be sure to clean the heads before attempting to make any adjustments.
3. Be sure both channels (1 and 2) are the same level (Using a dual-channel oscilloscope).
4. All wiring should be returned to the original position after work is completed.



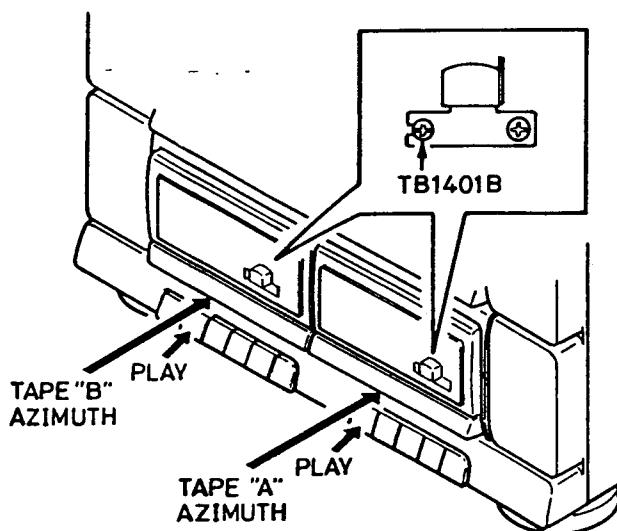
B) Phase alignment

1. Prepare a dual-channel oscilloscope.
2. Set so that the left and right ranges of the oscilloscope are the same.
3. Play the test tape (MTT-114N, etc.: 10 kHz).
4. Adjust so that the waveforms for the left and right channels are in alignment, as shown in the illustration.



c) TAPE "A", "B" Head azimuth adjustment

1. Load a test tape in Tape Deck "A" (MTT-114N, etc.: 10 kHz) for azimuth adjustment.
2. Press the PLAY (▶) button.
3. Use a flat-tip (-) screwdriver to turn the screw for normal azimuth adjustment so that the left and right outputs are maximized at the same phase during playback.
4. Press the STOP button.
5. Repeat procedure for tape Deck "B".
6. After completion of the adjustment, use thread-lock (TB1401B) to secure the azimuth-adjustment screws.



TAPE DECK ADJUSTMENTS

II) CHECKING THE MECHANISM TORQUES

1. Clean the head, capstan and pinch roller before making any measurement.

Measuring Item	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111 F. FWD/REW:TW2231	PLAY:TW-2111	Drive-power cassette TW-2412
PLAY	30~60gr·cm	1.5~4.5gr·cm	60gr or more
F. FWD/REW	55~120gr·cm	—	—

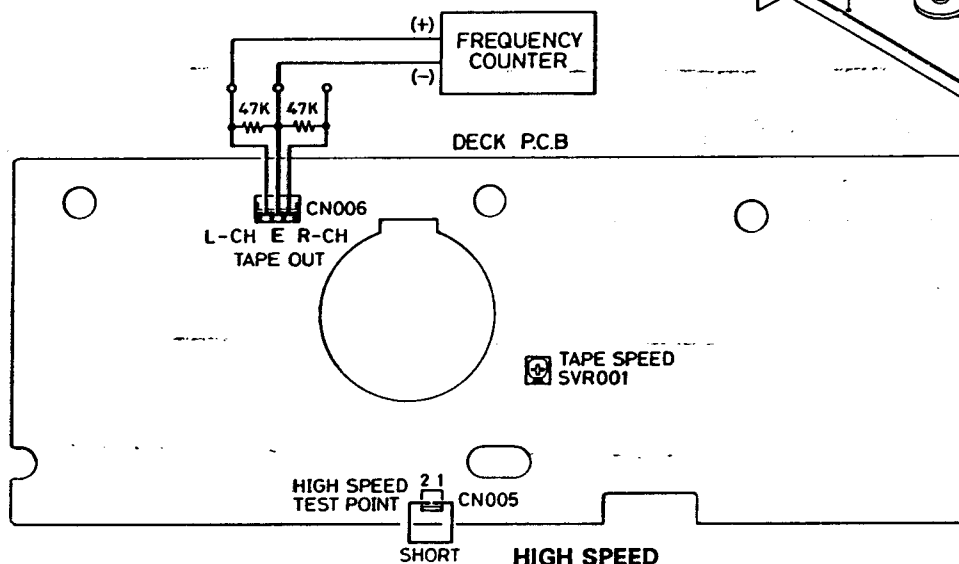
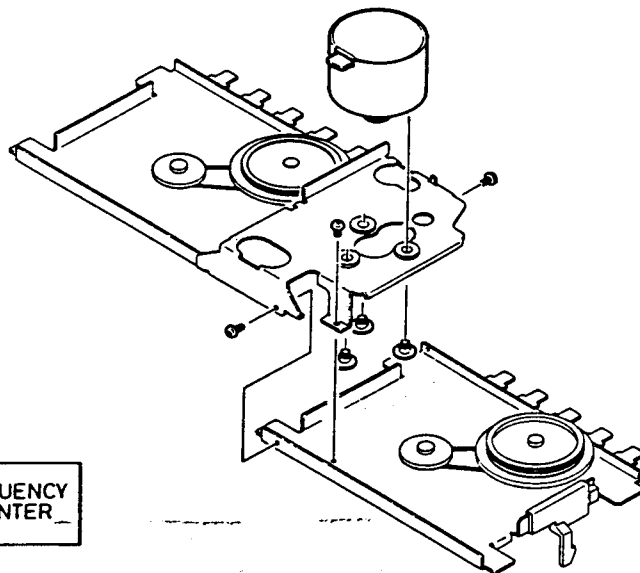
III) MOTOR REPLACEMENT AND SPEED ADJUSTMENT

A) Motor replacement

1. See illustration at right.

B) Motor speed adjustments

1. Make the adjustment near where the test tape finishes winding.
2. Be sure to make the adjustment of the motor speed only after completion of the high-speed timing adjustment for tape deck A and tape deck B, and then making the normal-speed timing adjustment of decks A and B.



NORMAL SPEED

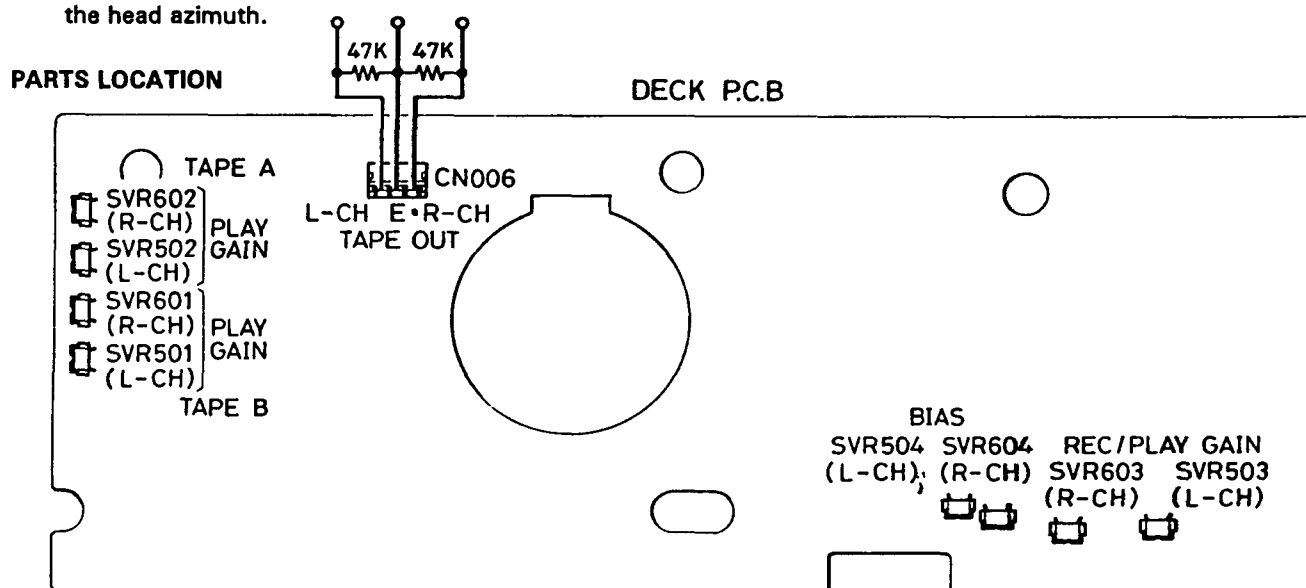
- (1) Insert the test tape (MTT-111, etc. 3,000 Hz) into tape deck A.
- (2) Press tape deck A's PLAY button.
- (3) Adjust SVR001 so that the frequency counter shows a reading of 3,000Hz.
- (4) Press tape deck A's STOP button.
- (5) Insert the test tape into tape deck B.
- (6) Press tape deck B's PLAY button.
Checking the frequency counter shows a reading of 3,000 Hz (−40, +70Hz).
- (7) Press tape deck B's STOP button.

HIGH SPEED

- (1) Insert the test tape (TCW-211, etc. 1,500 Hz optional). into tape deck A.
- (2) Press tape deck A's PLAY button.
- (3) Set to the high-speed condition.
- (4) Short-circuit test points CN005 pins 1 and 2.
- (5) Checking the frequency counter reading is 3,000 Hz.
- (6) Press tape deck A's STOP button.
- (7) After the completion of the adjustment, remove the short-circuit between test points CN005 pins 1 and 2.

TAPE DECK ADJUSTMENTS

- Make the following adjustments after first cleaning the head assembly and checking the adjustment of the head azimuth.



Adjustment Item	Test tape	DOLBY NR SW.	Measuring Instrument	Input connection	Output connection	Adjustment location	Adjustment value
a) Playback output adjustment	TCC-130 (DOLBY TAPE)	OFF	AC-voltmeter	—	TAPE OUT (CN006)	(TAPE "A") SVR502, SVR602 (TAPE "B") SVR501, SVR601	540mV
b) Recording/playback gain adjustment	AC-224 (NORMAL)	OFF	AC-voltmeter AF-oscillator	VIDEO —14dB, 1kHz		SVR503, SVR603	0 ± 1dB
c) Recording/playback frequency response adjustment	AC-224 (NORMAL)	OFF	AC-voltmeter AF-oscillator	VIDEO —34dB, 1kHz, 10kHz		SVR504, SVR604	0 ± 1dB at 1kHz and 10kHz

1) AMPLIFIER ADJUSTMENTS

A) Playback output adjustment

1. TAPE "A"

Play the test tape and adjust SVR502 (L-channel) and SVR602 (R-channel) so that playback output becomes 540 mV.

2. TAPE "B"

Play the test tape and adjust SVR501 (L-channel) and SVR601 (R-channel) so that playback output becomes 540 mV.

B) Recording/playback frequency gain adjustment.

DOLBY NR switch : OFF

Input signal : —14dB, 1kHz.

Tape to be used : NORMAL (AC-224, etc.)

1. Introduce input signals to the VIDEO terminals, and, with the unit in the REC. PAUSE mode, adjust input level for 3dB out.

2. Record the input signal.

3. Press the REWIND button and rewind the tape to the beginning of the recording just made.

4. Press the PLAY button.

5. Adjust SVR503 (L-channel) and SVR603 (R-channel) so that the recording and playback output level differences become ± 1dB.

6. Repeat steps (1) to (5).

C) Recording/playback frequency response adjustment.

DOLBY NR switch : OFF

1. NORMAL TAPE

Tape to be used : NORMAL (AC-224)

Input signal : —34dB, 1kHz, 10 kHz

a) Introduce input signals to the VIDEO terminals.

b) With the unit in the REC. mode.

Record these input signals (1kHz → 10kHz → 1kHz → 10kHz).

c) Press the REWIND button and rewind the tape to the beginning of the recording just made.

d) Press the PLAY button.

e) Adjust SVR504 (L-channel) and SVR604 (R-channel) so that the 10 kHz and 1 kHz output level differences become ± 1dB.

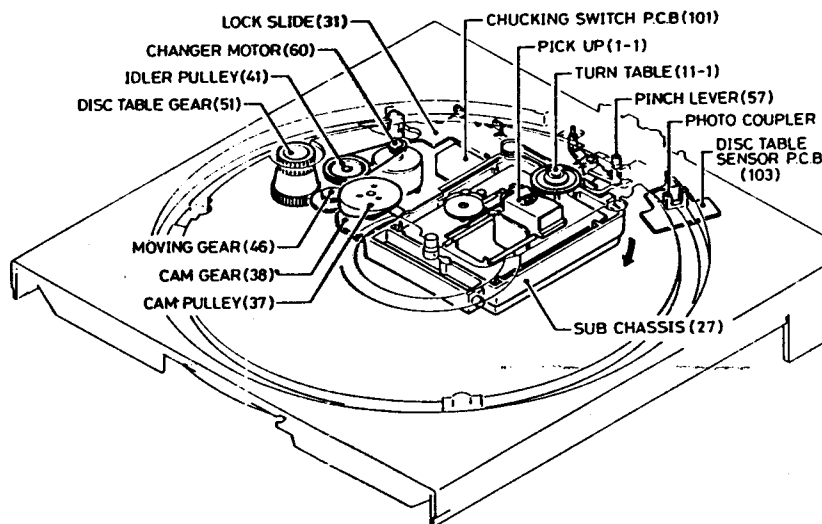
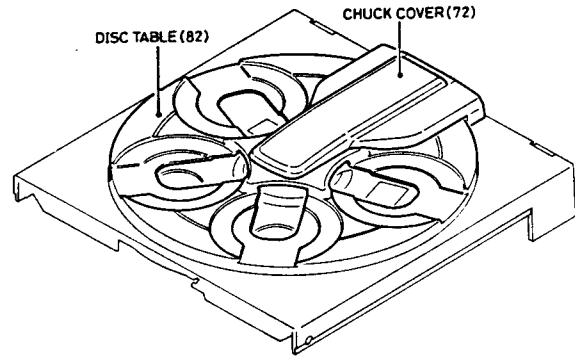
f) Repeat steps (a) to (e).

ILLUSTRATION OF CD CHANGER MOVEMENT

- This CD changer can accommodate and play up to 5 discs.

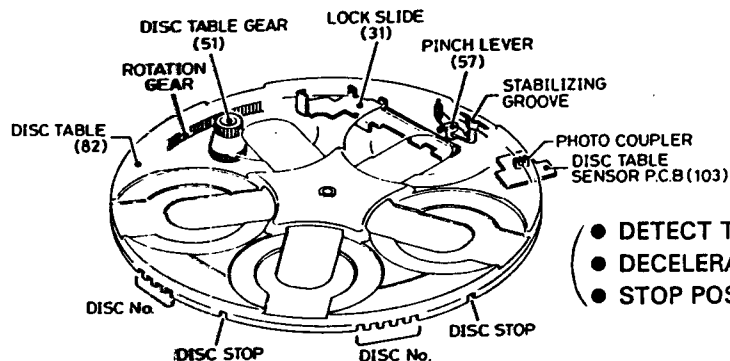
a. OPERATION

1. "POWER" ON.
2. "FUNCTION" CD.
3. "DISC SELECT" 1.
4. The sub chassis (27) moves down.
5. The disc table (82) turns, and the disc 1 table is brought directly above the mechanism where it stops.
6. The sub chassis moves up, the disc is chucked, the turntable (11-1) rotates, the disc's TOC (table of contents) is read, and the turntable then stops.
If a disc has not been intalled, "no disc" appears on the display.
7. When "DISC SKIP" is pressed, steps 4 to 6 are performed, and operation advances to the next disc number.



b. NAME AND FUNCTIONS OF MAJOR PARTS

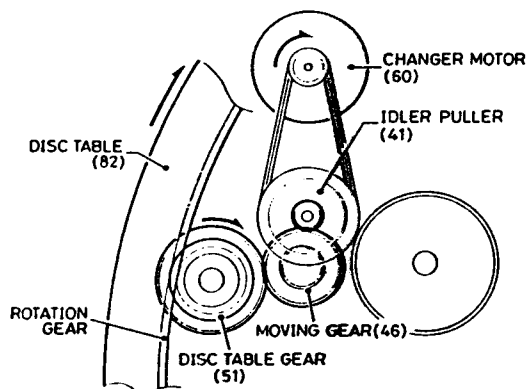
1. Disc table (82)
Disc number detection slits 1 to-5 and a stop detection slit are cut into the outside circumference of the disc table.
These slits are used by the photo coupler to detect the disc number, deceleration timing and stop position.
Also provided on the circumference of the table are a stabilizing groove and rotation gear.



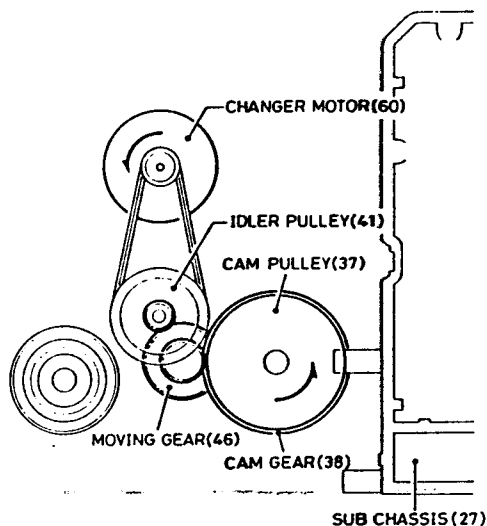
- DETECT THE DISC NUMBER
- DECELERATION TIMING
- STOP POSITION

ILLUSTRATION OF CD CHANGER MOVEMENT

2. Disc table gear (51)
This transmits the rotational force of the changer motor assembly (60) to the disc table.
3. Sensor circuit board assembly
This identifies the detection signals from the photo coupler and controls the changer motor.



4. Changer motor
When the motor moves in a clockwise direction, the resulting power turns the disc table; when it moves in a counterclockwise direction, it causes the cam gear (38), cam pulley (37) to rotate, and it moves the sub chassis up and down.



5. Chucking detector switch circuit board assembly
This circuit board is equipped with switches SW2 and SW3 which are turned ON/OFF by the lock slide (31). When SW2 is set ON, it means that the upward motion of the sub chassis is completed or, in other words, that the disc chucking is completed. When SW3 is SET ON, it means that the downward motion of the sub chassis is completed or, in other words, that the disc table is set to the rotation standby status.

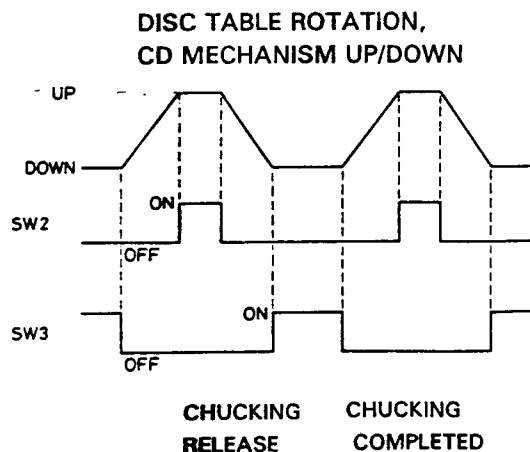
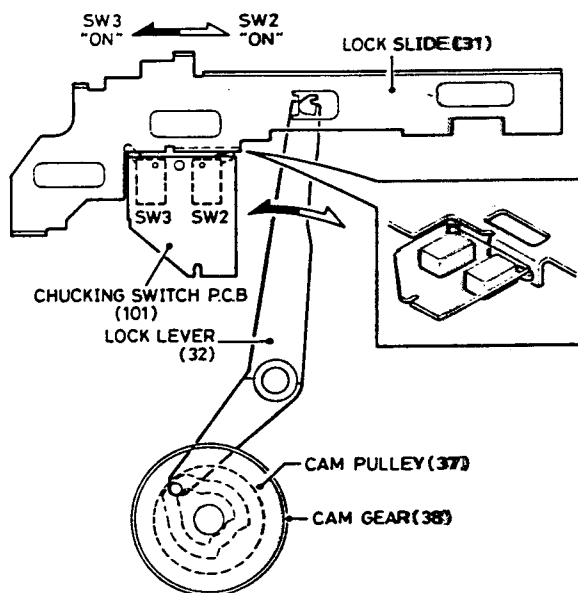


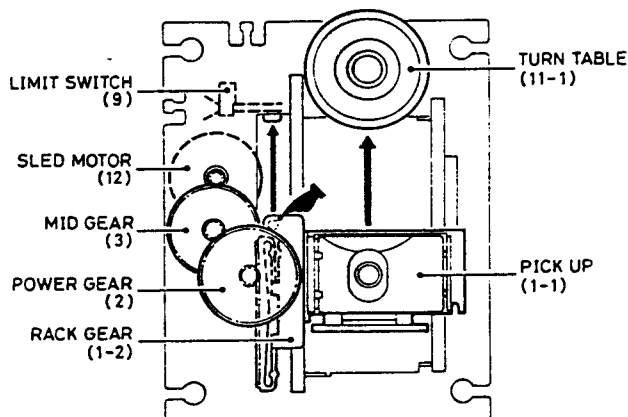
ILLUSTRATION OF CD CHANGER MOVEMENT

6. Limit switch (9)

This switch is provided on the CD mechanism (11) to stop the pickup at its precise home position.

The sled motor (12) moves the pickup via the power gear (2), mid gear (3) and rack gear (1-2) which is secured to the pickup. Moving toward the center from the outer circumference, the pickup sets the limit switch ON at the end of the rack gear, opens the CD main circuit board (91) circuit, moves forward for about 10ms and then reverses.

The rack gear which moves in reverse sets the limit switch, OFF, moves forward for about 10ms and then stops.



c. ILLUSTRATION OF CD PLAYER MOVEMENT

1. The sub chassis (27), which is secured by the CD mechanism, is pulled upward at all times by tension spring "L" (26), and tension spring "R" (28), and it is kept in place by the cam pulley (37), lock slid, etc.

2. The rotational force of the changer motor is applied to the moving gear and idler pulley secured to the moving lever.

The moving gear performs two different operations depending on the direction in which the changer motor is rotating.

When the motor is rotating clockwise, the gear causes the disc table to rotate through the disc table gear; when it is rotating counterclockwise, it rotates the cam gear and cam pulley, and it moves the sub chassis up and down. At the same time, it activates the lock lever, which is linked to the cam on the bottom of the cam gear, and then the lock slide in turn.

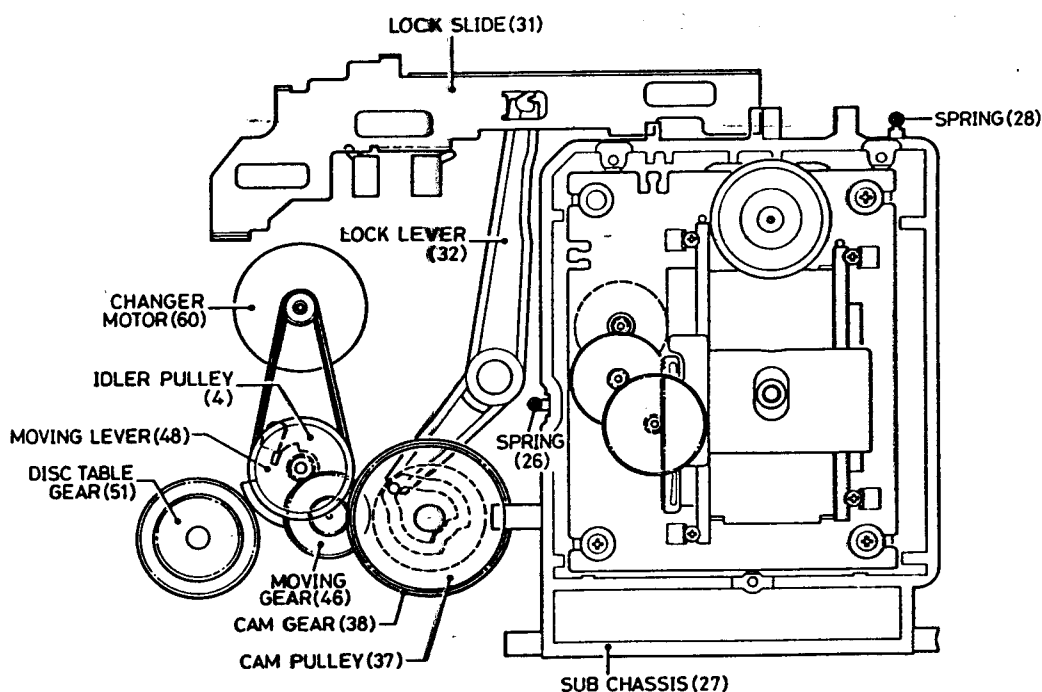
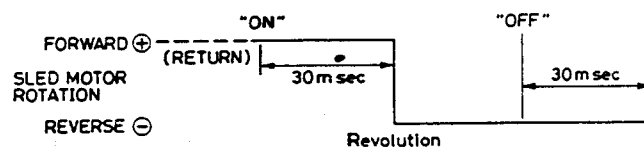
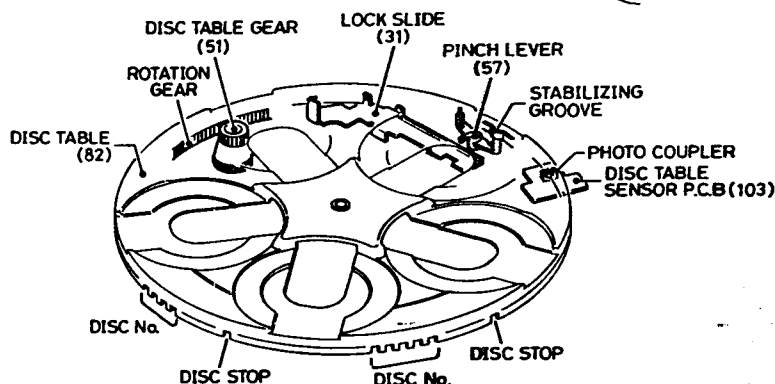
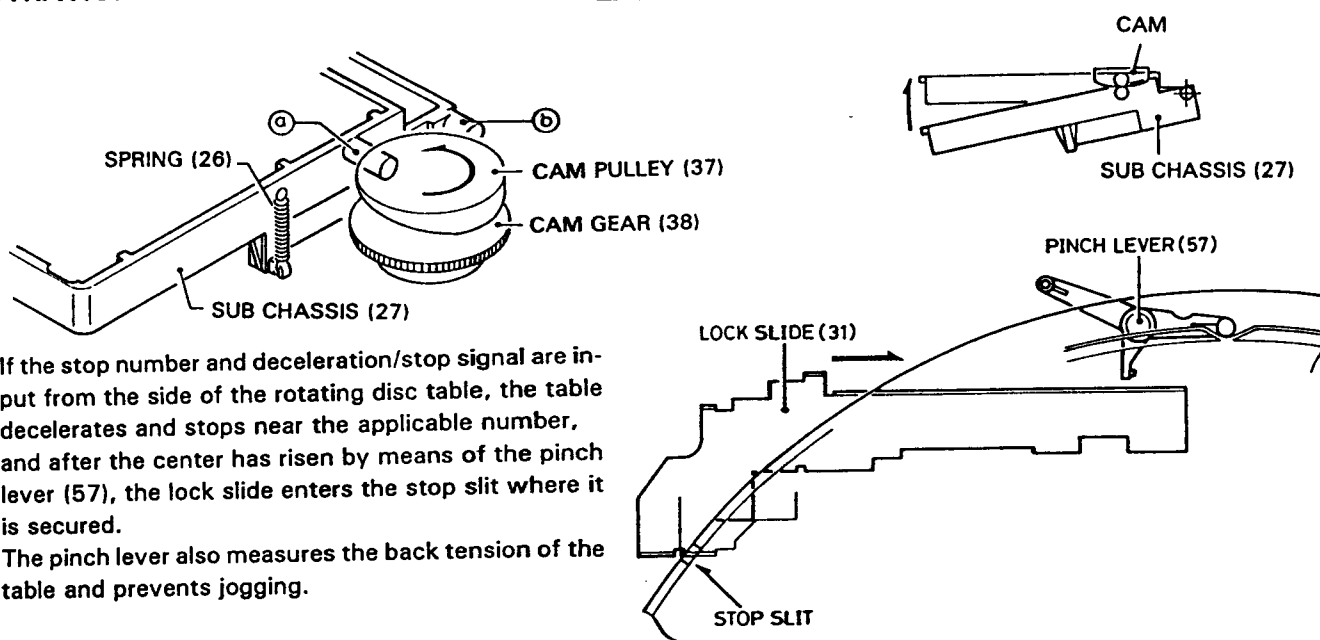
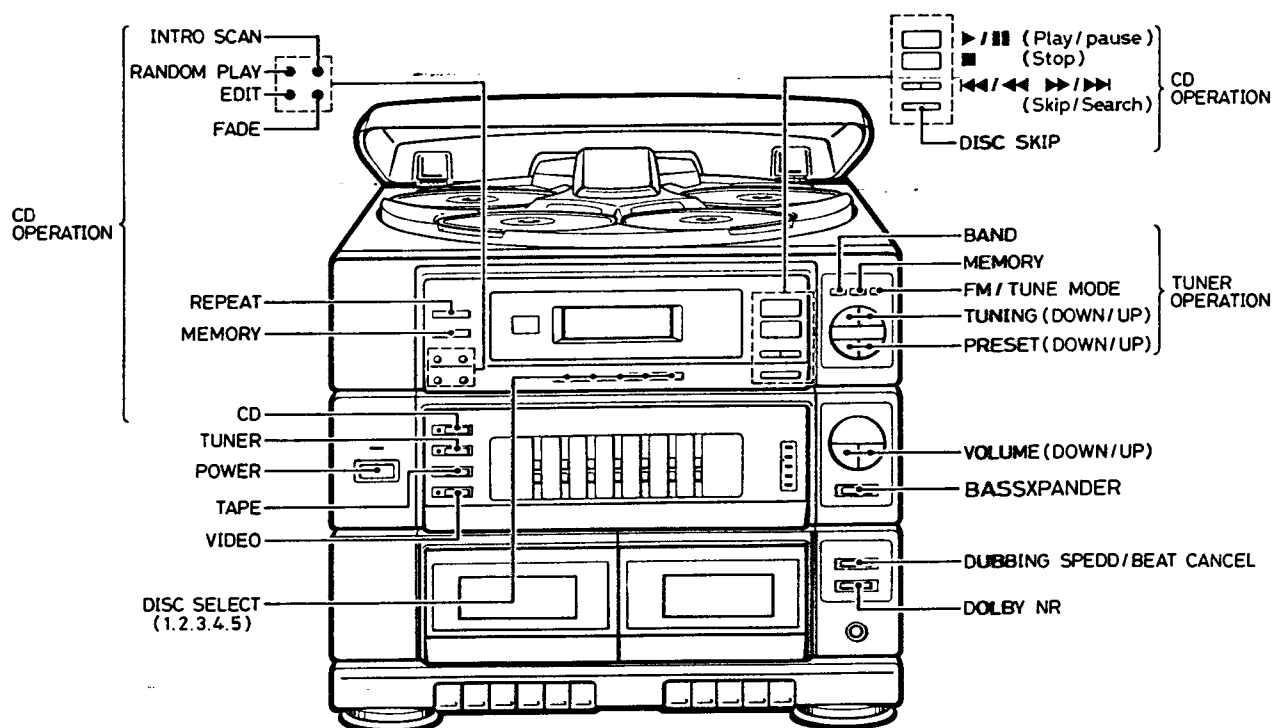


ILLUSTRATION OF CD CHANGER MOVEMENT



CD PLAYER'S SERVICE MODE

- The service mode can be used to check the CD player.



CD PLAYER'S SERVICE MODE

a. THE DISPLAY WHEN THE KEY SWITCH HAS BEEN PRESSED

- (1) Turn the POWER switch to "ON."
- (2) Switch the unit to the service mode by pressing the tuner's "MEMORY" key within one second after pressing the CD player's "MEMORY" key and the tuner's "BAND" key simultaneously.
- (3) When the tuner's "BAND" key is pressed, the LCD reads "REC" to indicate that the key input has been registered.
- (4) When the tuner's "MEMORY" key is pressed, the LCD, in addition to "REC" described in (3) above, also reads "TIMER".
- (5) Thus, as shown in the table below, the characters and symbols displayed on the LCD increase as the corresponding keys are pressed.
- (6) To cancel the service mode, press the "FM/TUNE MODE" key.

KEY BUTTON	LCD INDICATED	KEY BUTTON	LCD INDICATED
(TUNER)		(CD)	
BAND	REC	MEMORY	PROG.
MEMORY	TIMER	REPEAT	REPEAT
FM/TUNE MODE	(To cancel the service mode)	PLAY/PAUSE	▷
TUNING "UP"	SLEEP	STOP	ONE
TUNING "DOWN"	CONT	▶▶	DISC
PRESET "UP"	SIDE A	◀◀	TRACK
PRESET "DOWN"	SIDE B		
(CD)		DISC SKIP	ALL
RANDOM PLAY	RANDOM	EDIT	EDIT
INTRO SCAN	INTRO		
FADE	FADE		
(DISC SELECT)	(PROGRAM)	(FUNCTION)	(PROGRAM)
1	1	CD	13
2	2	TUNER	14
3	3	TAPE	15
4	4	VIDEO	▶
5	5		

b. CHECKING THE MOUNTING OF THE LCD'S PRINTED CIRCUIT BOARD

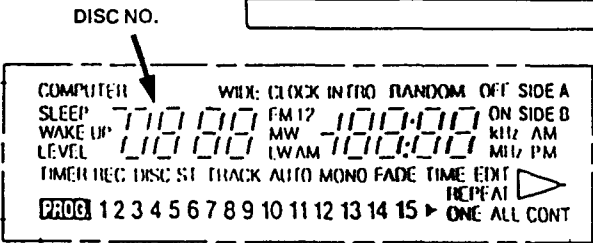
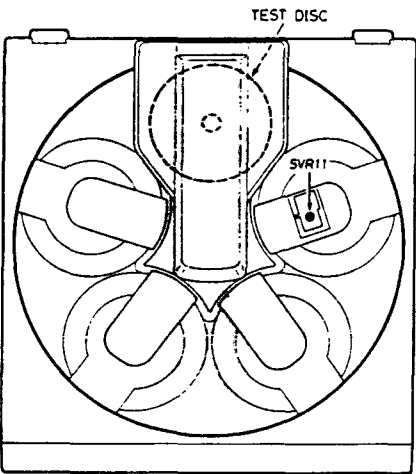
- (1) Turn the POWER switch to "ON".
- (2) Switch the unit to the service mode by pressing the CD player's "REPEAT" key within one second after pressing the CD player's "MEMORY" key and the tuner's "BAND" key simultaneously.
- (3) Confirm that one segment of the LCD comes on each time the CD player's "REPEAT" key is pressed.
- (4) To cancel the service mode, press the "FM/TUNE MODE" key.

COMPUTER REC.	WIDE CLOCK	INTRO	RANDOM	OFF	SIDE A
SLEEP	h	11	12	13	14
WAKE UP	1	2	3	4	5
LEVEL	1	2	3	4	5
TIMER REC	DISC	ST	TRACK	AUTO	MONO
FADE	TIME	EDIT	REPEAT	▶	
PROG.	1	2	3	4	5
	6	7	8	9	10
	11	12	13	14	15
	▶	ONE	ALL	CONT	

D PLAYER'S SERVICE MODE

CHECKING THE CD PLAYER'S OPERATIONS WITH THE LCD'S NUMBER DISPLAY

- (1) Set the CD player to disc table " 1 ".
 - (2) Press disc select key " 1 ".
 - (3) Preparations for setting the unit to the " PLAY " status are now complete.
 - (4) To check the operation mode, switch to the service mode.
 - (5) Turn the POWER switch to " ON ".
 - (6) Switch the unit to the service mode by pressing the CD player's " STOP " key within one second after pressing the CD player's " MEMORY " key and the tuner's " BAND " key simultaneously.
 - (7) The numbers (0 through 5) that appear in the LCD's " DISC NO. " indicate whether the CD player is operating correctly or not.
- If a malfunction exists, refer to the table below to determine the nature of the malfunction.



LCD DISC NO.	CD ERROR MESSAGE
0	No malfunction
1	The pickup's laser was not focused properly during a focus search.
2	The sub-code could not be read when the disc began spinning.
3	The TOC (table of contents) could not be read.
4	The focus was lost when the servo was on (e.g., during playing).
5	The sub-code could not be read when the servo was on. (e.g., during playing).

- (8) " TRACK NO. " in the LCD indicated how far the CD player's operations have progressed.

LCD TRACK NO.	CD OPERATION
00	FOCUS SEARCH START
01	FOCUS SEARCH START
02	The unit is waiting for the pickup's laser to focus during a focus search.
03	Focusing of the pickup's laser during a focus search has been completed.
04	The kick when the spindle motor begins rotating.
05	CLT (Constant liner velocity) and Tracking " ON "
06	CLT and Tracking " ON "
0—	FOCUS SEARCH END
30	Braking of the spindle motor is begun.
31	Braking of the spindle motor is in progress.
32	Pickup Return
3—	Pickup Return End
40	▶▶ (FWD, SKIP/SEARCH)
41	◀◀ (REVERSE, SKIP/SEARCH)
50	PLAY
51	PLAY
52	PLAY (music skip)

CD PLAYER'S SERVICE MODE

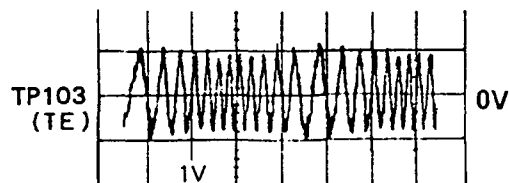
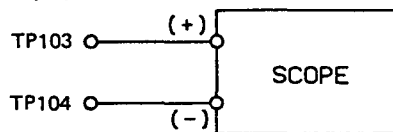
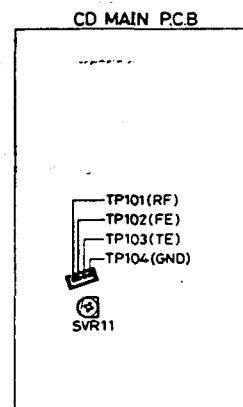
LCD TRACK NO.	CD OPERATION
60	Reading of the TOC (table of contents) is begun.
61	Reading of the TOC is in progress.
62	Reading of the TOC is in progress.
6—	Reading of the TOC is in completed.
85	Pausing is begun.
86	Pause
90	A CD track is accessed.
}	
99	A CD track is accessed.
9A	A CD track is accessed. (final stages)
9—	A CD track is accessed. (final stages)
A0	CD mechanism moves down
A2	The turn table begins spinning.
A7	The turn table spins at low speed.
A8	CD mechanism moves up
A9	CD mechanism chucking
A—	Chucking of the CD mechanism is completed.

- (9) To cancel the service mode, press the "FM/TUNE MODE" key.
- (10) Turn the POWER switch to "OFF"

d. HOW TO ADJUST THE CD PLAYER'S TRACKING BALANCE IN THE SERVICE MODE

- Refer to pages 21 and 22 for instructions on adjusting without using the service mode.
- Adjustment is easier in the service mode because it is not necessary to repeatedly press the FORWARD SEARCH button.

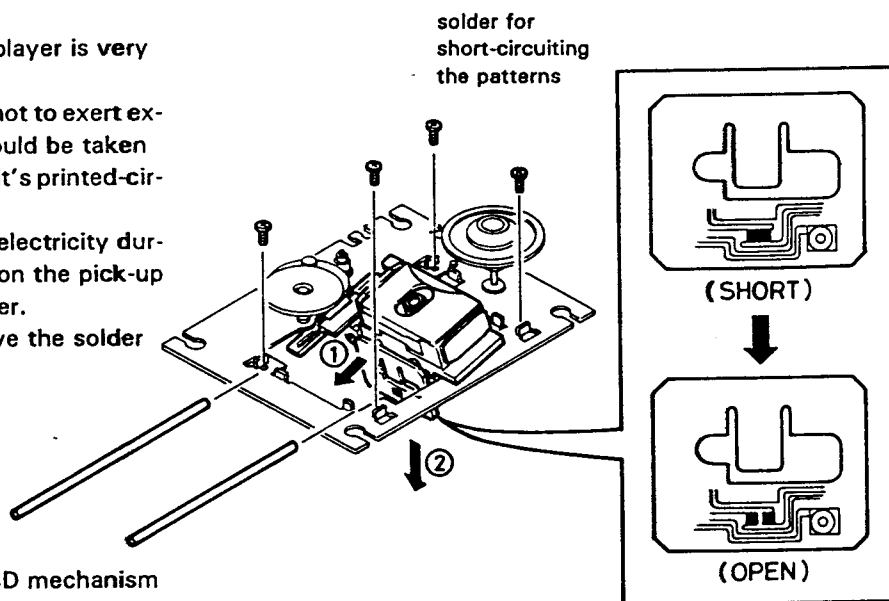
- (1) Connect an oscilloscope to TP103 (TE).
- (2) Switch the unit to the service mode by pressing the CD player's "PLAY/PAUSE" key within one second after pressing the CD player's "MEMORY" key and the tuner's "BAND" key simultaneously.
- (3) Program numbers "1" and "15" on the LCD come on, and the unit enters the service mode for adjusting the tracking balance.
- (4) Play the test disc.
- (5) Using an oscilloscope to measure signal TP103 (T.E.), adjust SVR11 so that a vertically symmetrical wave-form for the 0V level is obtained.
- (6) If the wave-form is not vertically symmetrical like the one shown in the illustration, press the CD player's "MEMORY" key to adjust SVR11.
- (7) Press the stop button.



CD PLAYER ADJUSTMENTS

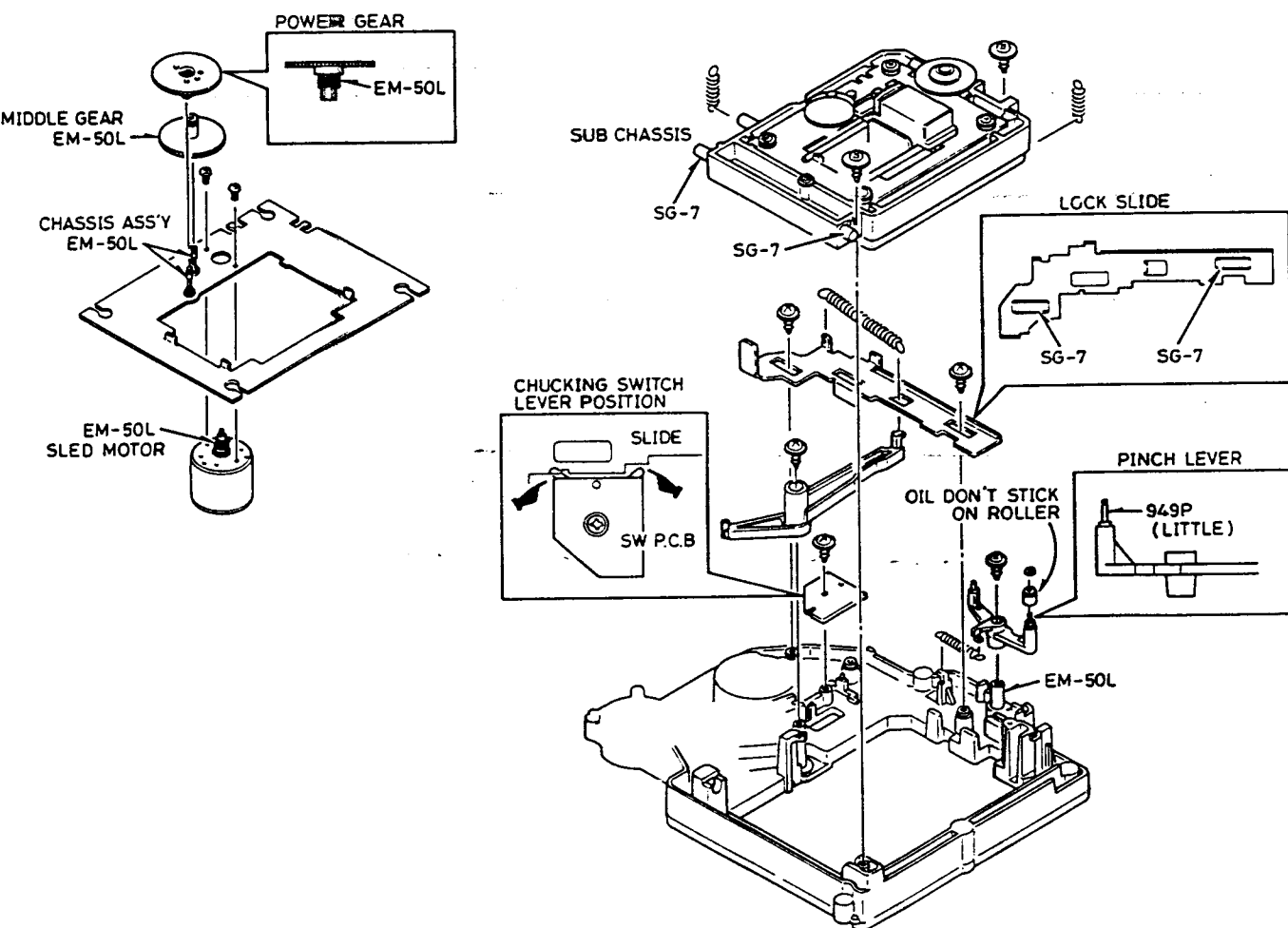
(a) Replacement of the pick-up

- Note that the mechanism of the CD player is very delicate.
- When handling the pick-up, take care not to exert excessive force, and particular care should be taken not to touch the lens or the drive circuit's printed-circuit board pattern.
- In order to prevent damage by static electricity during shipment, the indicated patterns on the pick-up P.C.Board are short-circuited by solder. After the pick-up replacement, remove the solder that is short-circuiting the patterns.



(b) Replacement and lubrication of the CD mechanism

(BE SURE, AT THIS TIME, NOT TO TOUCH ANY OTHER PART.)

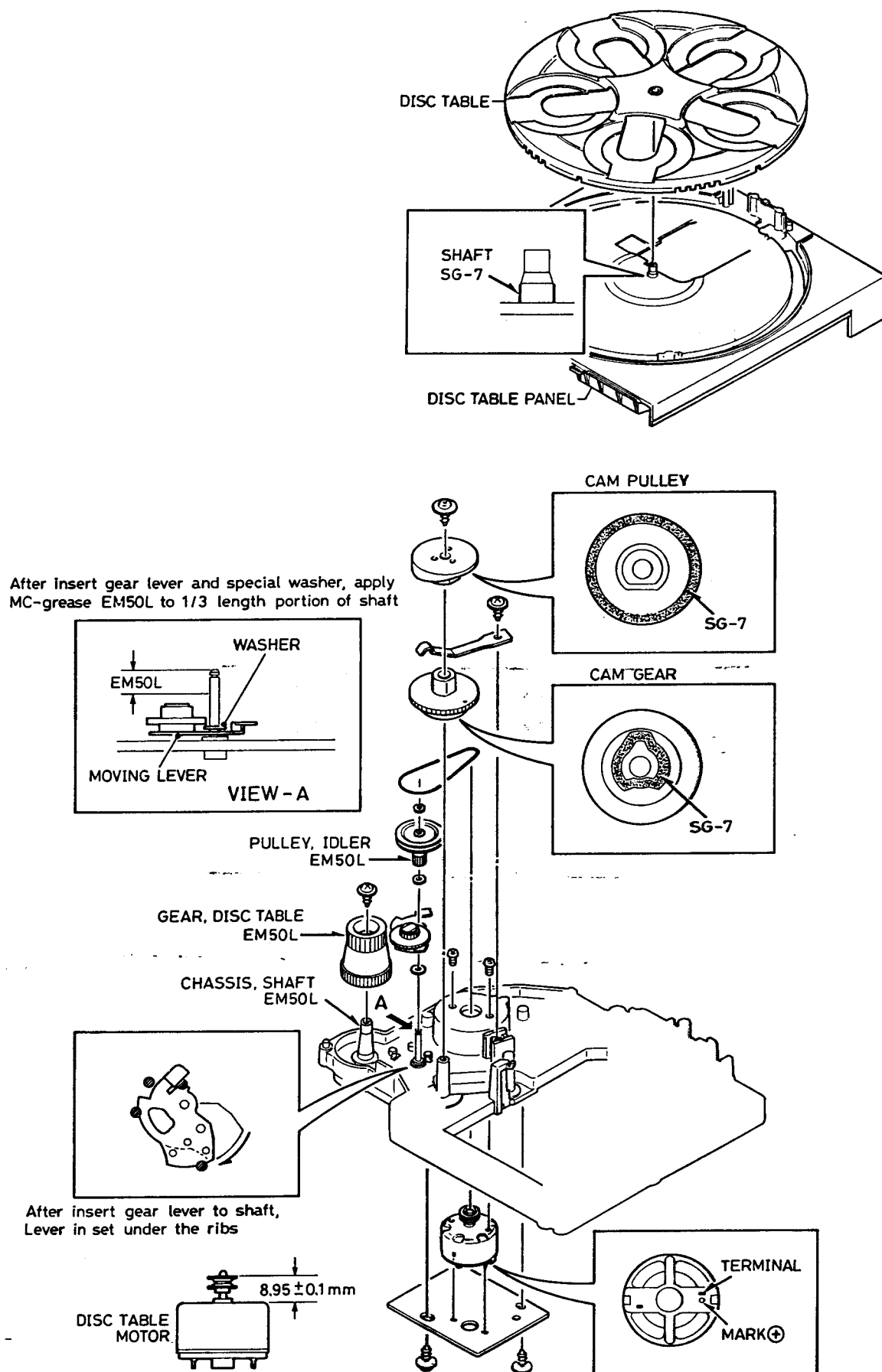


Note:

M-50	MOLYKOTE, EM-50L
SG-7	SANGREASE, SG-7
949P	FLOIL OIL, 949P

CD PLAYER ADJUSTMENTS

(c) Replacement and lubrication of the CD changer

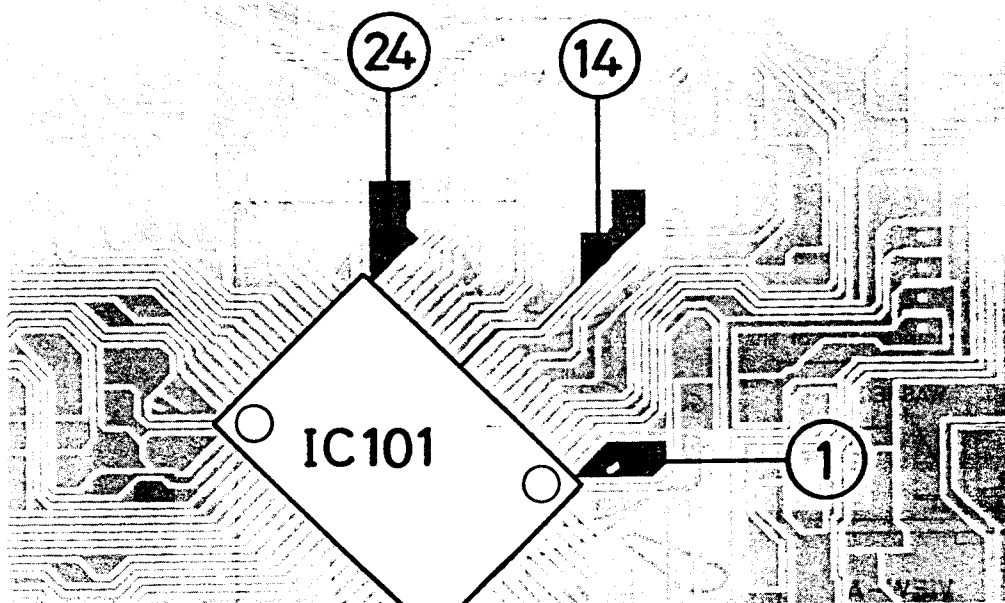
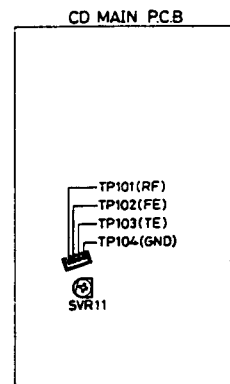
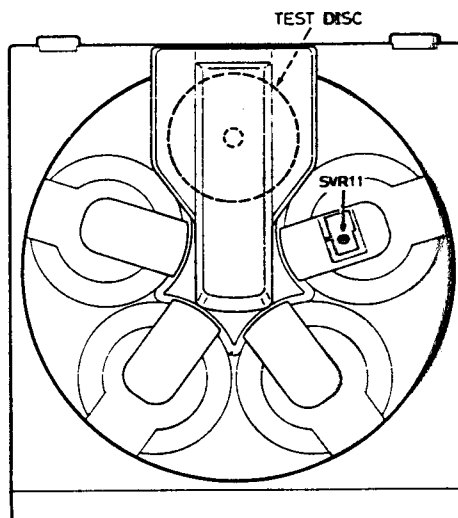


CD PLAYER ADJUSTMENTS

PREPARATION FOR ADJUSTMENTS

- 1) Measuring instruments, tools and filter
- 2) Test disc : F30L-50146 (Poly Gram) etc.
- 3) Oscilloscope : SS5711 (10 MHz or dual phenomenon) or, Memoryscope : DSS6521 (Storagescope)
- 4) AC voltmeter (—80dB, input impedance 1M Ω or more)
- 5) AF-oscillator (400Hz, 500mV RMS)
- 6) Screwdrivers (non-metallic) for adjustments.
- 7) Band pass filter

PARTS LOCATION



- NOTE: 1. All measurements are referred to TP104 (GND).
 2. Adjust SVR11 is initial setting position, as shown in the illustration.

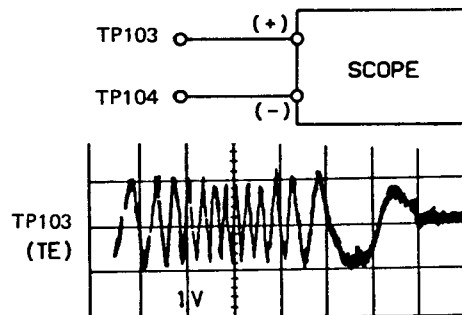
ADJUSTMENTS

Adjustment Item	Test disc	Measuring instrument	Input connection	Output connection	Adjustment location	Adjustment value
(a) Tracking balance adjustment	F30L-50146	Oscilloscope	.....	TP103 (TE) TP104 (GND)	SVR11	Waveform symmetrical referred to 0V.
(b) Checking the focus gain		Memory scope	IC101 ②④ (H), TP104 (GND)	TP102 (FE) TP104 (GND)	.....	500m Vp-p \pm 3dB
(c) Checking the tracking gain		Oscilloscope	IC101 ①④ (H), TP104 (GND)	TP102 (TE) TP104 (GND)	.....	500m Vp-p \pm 3dB
(d) Checking the eye pattern		Oscilloscope	.....	TP101 (RF) TP104 (GND)	.....	" Eye " pattern.

CD PLAYER ADJUSTMENTS

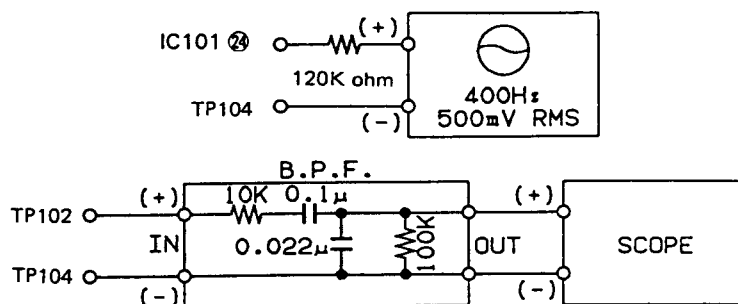
(a) Tracking balance adjustment

- (1) Connect an oscilloscope to TP103 (TE).
- (2) Play the test disc.
- (3) Push the FORWARD SEARCH button.
- (4) Keep the button pushed and adjust SVR11 (T. Balance) until the track-jump TE-waves on TP103 are symmetrical referred to OV.



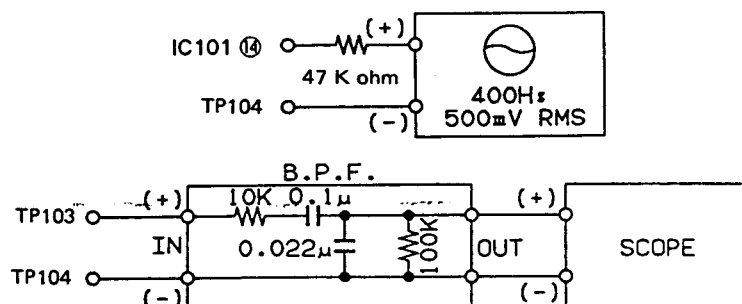
(b) Checking the Focus gain

- (1) Connect an oscilloscope via the band-pass filter to TP102 (FE).
- (2) Play the test disc.
- (3) Connect an AF-oscillator via a 120k ohm resistor to pin 24 of IC101.
Frequency = 400Hz, amplitude = 500 mV RMS.
- (4) Check the average 400 Hz FE-signal amplitude on TP102, measured through the band-pass filter, is 500m Vp-p \pm 3dB.



(c) Checking the Tracking gain

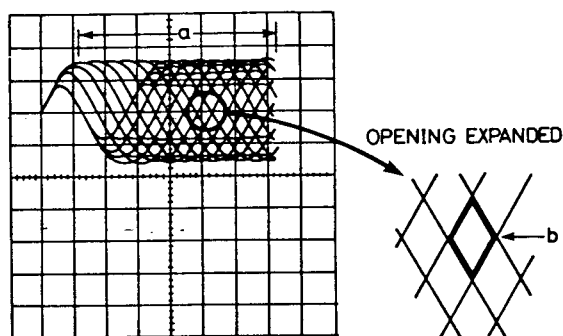
- (1) Connect an oscilloscope via the band-pass filter to TP103 (TE).
- (2) Play the test disc.
- (3) Connect an AF-oscillator via a 47K ohm resistor to pin 14 of IC101.
Frequency = 400Hz, amplitude = 500 mV RMS.
- (4) Check the average 400 Hz TE-signal amplitude on TP103, measured through the band-pass filter, is 500m Vp-p \pm 3dB.



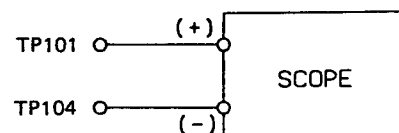
(d) Checking the eye pattern

The adjustments (a)-(c) complete the adjustments of the CD player.

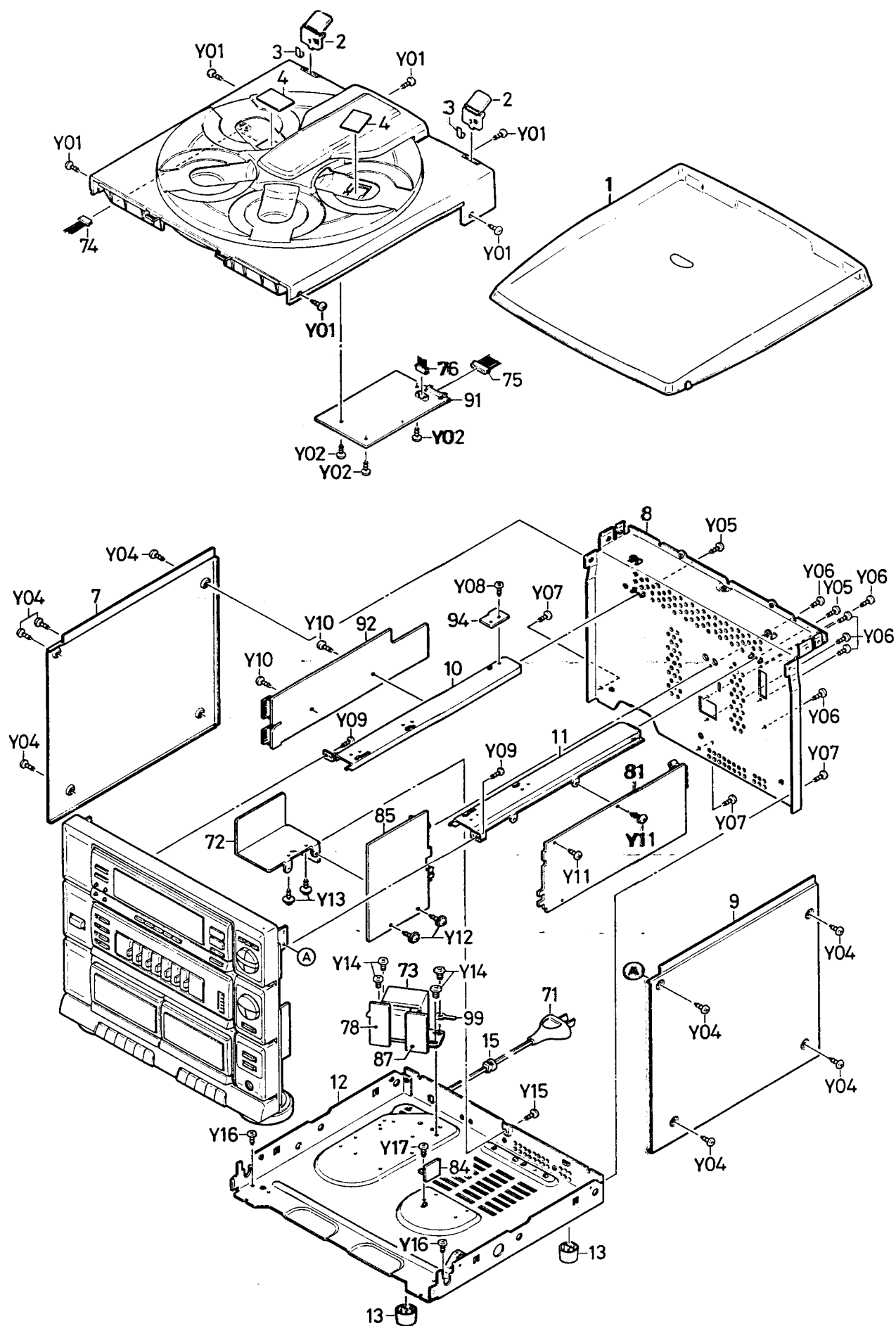
Next, check the eye pattern wavetorm.

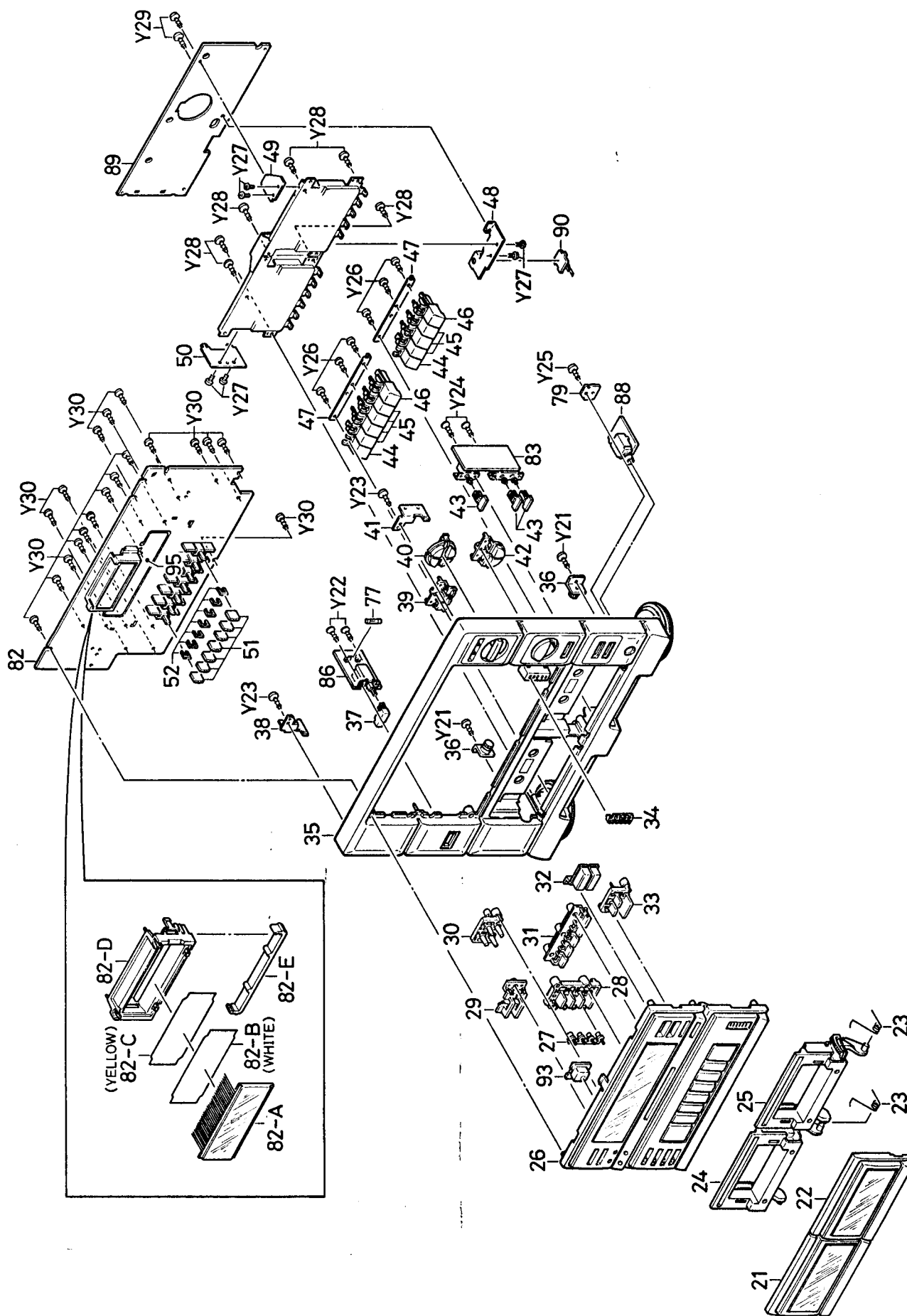


Measuring instrument	Test disc	Output connection point	" Eye " pattern
Oscilloscope	F30L-50146	TP101 ((RF) TP104 (GND)	<ul style="list-style-type: none"> • Check to be sure that the " eye " pattern is at the center of the waveform and that the diamond shape is clearly defined.



EXPLODED VIEW (CABINET & CHASSIS)





PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION: Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

REF. NO.	PART NO.	DESCRIPTION
OR	614 244 0896	INNER CARTON, MADE IN SINGAPORE
	614 244 5013	INNER CARTON, MADE IN MALAYSIA
	614 240 7370	PAD, TOP
	614 240 7363	PAD, BOTTOM
	614 176 7024	INNER POLY COVER, SET
	614 180 4644	PROTECTOR SHEET, SET
	614 244 0940	INSTRUCTION MANUAL
	614 243 5472	NOTICE, CD MECHANISM PROTECT
	614 234 5511	LOOP ANTENNA, AM
	614 232 6671	ANTENNA, FM LEAD
	614 245 9867	ASSY. REMOCON, REMOTE CONTROL (WITH BATTERY LID)
	614 245 9751	ASSY. REMOCON
	614 235 9433	LID, BATTERY, REMOCON

CABINET & CHASSIS

REF. NO.	PART NO.	DESCRIPTION
1	614 240 6274	ASSY. COVER, DUST
2	614 112 3509	HINGE, DUST COVER
3	614 125 0830	CUSHION, 8X15MM, HINGE MTG.
4	614 232 4677	SHEET, CD CHANGER, DISC TABLE MTG.
7	614 239 4403	PANEL, SIDE, LEFT
8	614 244 0681	PANEL, REAR, MADE IN SINGAPORE
OR	614 244 4757	PANEL, REAR, MADE IN MALAYSIA
9	614 239 4410	PANEL, SIDE, RIGHT
10	614 240 2719	BRACKET-M, LEFT
11	614 240 2702	BRACKET-M, RIGHT
12	614 239 4281	CABINET, BOTTOM
13	614 216 7083	ASSY. FOOT, CABINET, BOTTOM MTG.
15	614 129 1901	FIXER, AC POWER CORD
21	614 240 7035	ASSY. DECORATION, TAPE "B"
22	614 242 4209	ASSY. DECORATION, TAPE "A"
23	614 218 0051	SPRING, WIRE, CASSETTE, LID
24	614 240 7011	ASSY. LID, CASSETTE, TAPE "B"
25	614 240 7028	ASSY. LID, CASSETTE, TAPE "A"
26	614 242 4223	ASSY. PANEL, CD/TUNER/AMP.
27	614 240 6403	WINDOW, FUNCTION INDICATOR, CD/TUNER/TAPE/VIDEO
28	614 240 6496	BUTTON, FUNCTION, CD/TUNER/TAPE/VIDEO
29	614 240 6465	BUTTON, REPEAT/MEMORY, CD
30	614 240 6489	BUTTON, EDIT/FADE/RANDOM PLAY/INTRO SCAN
31	614 240 6502	BUTTON, DISC SELECT
32	614 240 6458	BUTTON, PLAY-PAUSE/STOP, CD
33	614 240 6472	BUTTON, FF/SKIP
34	614 240 6410	WINDOW, VOLUME POSITION INDICATOR
35	614 242 4216	ASSY. PANEL, FRONT
36	614 069 0385	GEAR ASSY. CASSETTE LID
37	614 239 4519	BUTTON, POWER
38	614 240 8926	BRACKET-E, FRONT, LEFT SIDE
39	614 239 4526	BUTTON, BAND MEMORY
40	614 242 0447	BUTTON, TUNING
41	614 239 4618	BRACKET-E, FRONT, RIGHT SIDE
42	614 242 0454	BUTTON, VOLUME

REF. NO.	PART NO.	DESCRIPTION
43	614 228 0218	BUTTON, BASS/PANOR/DUBBING -SPEED CANCEL/DOLBY NR
44	614 216 9124	BUTTON, RECORD, PLAY (TAPE "A")
45	614 216 9063	BUTTON, PLAY (TAPE "B"), REW/FWD/STOP-EJECT
46	614 216 9117	BUTTON, PAUSE, TAPE
47	614 194 9239	BRACKET, TAPE MECHANISM KNOB
48	614 216 9254	BRACKET-E, TAPE MECHANISM, BOTTOM
49	614 216 9247	BRACKET-E, TAPE MECHANISM, UPPER
50	614 216 9230	BRACKET-E, TAPE MECHANISM, LEFT
51	614 220 6737	KNOB, SLIDE, GRAPHIC EQUALIZER & BALANCE
52	614 220 6690	WINDOW, GRAPHIC EQUALIZER/BALANCE VOLUME MTG.
99	614 051 1908	LUG, POWER TRANSFORMER
	614 208 0596	CUSHION, 10X40MM, MECHANISM LEAD FIX.
	614 231 6832	LABEL, SAFETY, CLASS 1, REAR PANEL MTG.
	614 212 8343	LABEL, SAFETY, CAUTION---INVISIBLE LASER RADIATION---, DISC TABLE PANEL MTG.
	614 129 4971	FIXER, LEAD FIX

FIXING PARTS

REF. NO.	PART NO.	DESCRIPTION
Y01	411 021 6603	SCR S-TPG BIN 3X8MM, CD CHANGER MTG.
Y02	411 021 3503	SCR S-TPG BIN 3X10MM, CD MAIN P.C.B.
Y04	411 021 6603	SCR S-TPG BIN 3X8MM, SIDE PANEL MTG.
Y05	411 021 3503	SCR S-TPG BIN 3X10MM, REAR PANEL, BRACKET MTG.
Y06	411 021 3503	SCR S-TPG BIN 3X10MM, REAR PANEL, SOCKET MTG.
Y07	411 021 3503	SCR S-TPG BIN 3X10MM, REAR PANEL, BOTTOM MTG.
Y08	411 021 6405	SCR S-TPG BIN 3X8MM, RESET P.C.B.
Y09	411 021 1806	SCR S-TPG BIN 2.6X10MM, BRACKET P.C.B. MTG.
Y10	411 021 6405	SCR S-TPG BIN 3X8MM, CD CONTROL P.C.B.
Y11	411 021 6405	SCR S-TPG BIN 3X8MM, TUNER P.C.B.
Y12	411 021 6405	SCR S-TPG BIN 3X8MM, POWER AMP. P.C.B.
Y13	411 132 3607	SCR S-TPG BRZ+FLG 2.6X8MM, POWER AMP. IC HEATSINK
Y14	411 001 3905	SCR S-TPG BIN 4X6MM, POWER TRANSFORMER P.C.B.
Y15	411 021 6405	SCR S-TPG BIN 3X8MM, CABINET BOTTOM/IC MTG.
Y16	411 021 6405	SCR S-TPG BIN 3X8MM, CABINET BOTTOM MTG.

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
Y17	411 021 6405	SCR S-TPG BIN 3X8MM, CABINET REGULATOR P.C.B. MTG.
Y21	411 021 3503	SCR S-TPG BIN 3X10MM, GEAR MTG.
Y22	411 022 2802	SCR S-TPG FLT 3X10MM, POWER SWITCH P.C.B.
Y23	411 021 6405	SCR S-TPG BIN 3X8MM, BRACKET MTG.
Y24	411 022 2802	SCR S-TPG FLT 3X10MM, SWITCH P.C.B.
Y25	411 021 3503	SCR S-TPG BIN 3X10MM, PHONES SOCKET P.C.B.
Y26	411 021 1806	SCR S-TPG BIN 2.6X10MM, TAPE MECHANISM KNOB MTG.
Y27	411 028 2905	SCR S-TPG PAN 2X4MM, BRACKET TAPE MECHANISM MTG.
Y28	411 021 6405	SCR S-TPG BIN 3X8MM, TAPE MECHANISM
Y29	411 021 6405	SCR S-TPG BIN 3X8MM, DECK P.C.B.
Y30	411 021 1806	SCR S-TPG BIN 2.6X10MM, FRONT P.C.B.

ELECTRICAL PARTS

REF. NO.	PART NO.	DESCRIPTION
71	Δ 614 023 2912	POWER CORD, AC
72	614 217 8690	HEAT SINK
73	Δ 614 245 8556	POWER TRANSFORMER, T901
74	614 244 7543	ASSY. CONNECTOR-S, 6P, CN003/CN111
75	614 244 7567	ASSY. CONNECTOR-S, 13P, CN104/CN106
76	614 244 7550	ASSY. CONNECTOR-S, 8P, CN105/CN112
77	Δ 423 016 9605	FUSE 250V 0.4A, F901
78	Δ 614 245 8396	PCB, POWER TRANSFORMER, PRIMARY
79	Δ 614 245 8457	PCB, PHONES SOCKET STOPPER
CN001	614 218 6459	ASSY. CONNECTOR-S, 3P, TAPE SELECT SWITCH
CN002	614 218 6442	ASSY. CONNECTOR-S, 6P, TAPE MECHANISM SWITCH

TUNER P.C. BOARD ASSY

REF. NO.	PART NO.	DESCRIPTION
81	614 243 0590	ASSY. PCB, TUNER
	614 116 5349	SHIELD PLATE, SIDE (2 USED)
	614 117 1029	SHIELD PLATE, PATTERN SIDE
	614 234 1728	TERMINAL
C2304	403 080 5000	POLYPRO 1000P J 100V
C2458	403 106 1603	NP-ELECT 1U 0 50V
CF201	614 231 0199	FILTER, 10.7MHZ
CF202	614 231 0199	FILTER, 10.7MHZ
CF204	614 208 9644	FILTER, 450KHZ
CF205	614 030 4787	CERAMIC FILTER
CN201	614 239 1686	TERMINAL, 4P, FM EXT. ANTENNA, AM LOOP ANTENNA
CN241	614 017 2614	PLUG, 10P, FRONT P.C.B. (CN251)
CN242	614 017 2553	PLUG, 4P, FRONT P.C.B. (CN252)
CT201	614 007 6356	TRIMMER, 11PF
D2101	407 105 0100	VARIABLE DI SVC211-B-AL (D2101-D2103)
D2104	407 007 9904	DIODE GMA01 (D2104, D2105)
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176
D2201	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176

REF. NO.	PART NO.	DESCRIPTION
D2301	407 007 9904	DIODE GMA01 (D2301, D2302)
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176
D2451	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176
IC201	409 195 3108	IC LA1265-AUD
IC202	409 016 9500	IC LA3361
IC203	409 066 7600	IC LM7001
L2102	614 229 0866	TRANSFORMER, RF
L2103	614 229 0873	TRANSFORMER, RF
L2104	614 239 7282	TRANSFORMER, OSC
L2105	614 028 4058	FILTER
L2150	614 241 1162	TUNER
L2451	614 028 4256	FILTER
Q2101	405 114 8506	TR 2SK193-ML
OR	405 114 8407	TR 2SK193-LL
Q2102	405 012 5904	TR 2SC1923-Y
Q2103	405 114 8506	TR 2SK193-ML
OR	405 114 8407	TR 2SK193-LL
Q2104	405 012 5904	TR 2SC1923-Y
Q2105	405 012 5904	TR 2SC1923-Y
Q2201	405 018 7902	TR 2SC3807M-0
Q2202	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q2203	405 001 7001	TR 2SA1015-GR
Q2301	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q2302	405 067 0800	TR RN2207
OR	405 078 2404	TR BN1A4P
OR	405 000 0904	TR DTA114YS
Q2351	405 067 0800	TR RN2207 (Q2351, Q2352)
OR	405 078 2404	TR BN1A4P
OR	405 000 0904	TR DTA114YS
Q2451	405 114 1804	TR 2SC1815 (LJ)-GR (Q2451, Q2452)
OR	405 114 1903	TR 2SC1815 (LJ)-Y
Q2461	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q2701	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q2702	405 016 2206	TR 2SC2878-B
OR	405 016 2305	TR 2SC2878-B
Q2801	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q2802	405 016 2206	TR 2SC2878-A
OR	405 016 2305	TR 2SC2878-B
Q2901	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
SVR23	614 204 1901	SEMI-FIXED RESISTOR, 10K OHM
T2201	614 239 7299	1F, T.L.
T2202	614 030 4114	I.F. T., 10.7MHZ
X2451	614 240 1118	RESONATOR, 7.2MHZ
OR	614 234 0486	RESONATOR, 7.2MHZ

FRONT P.C. BOARD ASSY

REF. NO.	PART NO.	DESCRIPTION
82	614 245 7702	ASSY. PCB, FRONT
A	614 239 1723	LCD, LCD01 (82-A)
B	614 240 8940	SHEET, WHITE, LCD (82-B)
C	614 244 9684	SHEET, YELLOW, LCD (82-C)
D	614 239 4656	MOUNT-M, LCD (82-D)
E	614 241 0998	COVER, LCD MTG., LOWER (82-E)
CN251	614 035 4997	SOCKET, 10P, TUNER P.C.B.
CN252	614 035 4935	SOCKET, 4P, TUNER P.C.B.
CN253	614 244 1602	ASSY. CONNECTOR-S, 10P, CN251/CN241

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
CN254	614 244 1596	ASSY,CONNECTOR-S,4P,CN252/CN242 CONNECTOR
CN255	614 035 4928	SOCKET,3P,IR P.C.B.
CN503	614 244 0155	SOCKET,9P,CN603/CN718 CONNECTOR
CN504	614 211 3202	SOCKET,5P,CN604/CN717 CONNECTOR
CN505	614 211 3233	SOCKET,5P,CN605/CN701 CONNECTOR
CN506	614 244 0148	SOCKET,6P,CN606/CN702 CONNECTOR
CN507	614 211 2991	SOCKET,2P,CN607/CN703 CONNECTOR
CN601	614 240 2450	PLUG,13P,CD CONTROL P.C.B., (CN109)
CN602	614 226 9978	PLUG,10P,CD MICRO PROCESSOR P.C.B., (CN108)
CN603	614 020 6616	SOCKET,9P,DECK P.C.B.
CN604	614 020 6579	SOCKET,5P,DECK P.C.B.
CN605	614 020 6579	SOCKET,5P,POWER AMP. P.C.B.
CN606	614 020 6586	SOCKET,6P,POWER AMP. P.C.B.
CN607	614 020 1222	SOCKET,3P,POWER AMP. P.C.B.
CN608	614 035 4973	SOCKET,8P,SWITCH P.C.B. (BASSXPANDER/DUBBING SPEED-BEAT CANCEL/DOLBY NR)
OR		
D2501	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176
D2502	407 005 4505	DIODE DS442X
D2503	407 007 9904	DIODE GMA01(D2503,D2504)
OR	407 012 4406	DIODE 1SS133
OR	407 012 5809	DIODE 1SS176
D4402	407 036 9203	LED SLP-138C-51-B,FUNCTION,CD
D4403	407 036 9203	LED SLP-138C-51-B,FUNCTION,TUNER
D4404	407 036 9203	LED SLP-138C-51-B,FUNCTION,TAPE
D4405	407 036 9203	LED SLP-138C-51-B,FUNCTION,VIDEO
D4411	407 039 5905	LED SLP-738F-51-B, VOLUME POSITION,LEVEL 1
D4412	407 039 5905	LED SLP-738F-51-B, VOLUME POSITION,LEVEL 2
D4413	407 039 5905	LED SLP-738F-51-B, VOLUME POSITION,LEVEL 3
D4414	407 039 5905	LED SLP-738F-51-B, VOLUME POSITION,LEVEL 4
D4415	407 039 5905	LED SLP-738F-51-B, VOLUME POSITION,LEVEL 5
D4420	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
D4421	407 007 9904	DIODE GMA01(D4421,D4422)
OR	407 012 4406	DIODE 1SS133
D4430	407 007 9904	DIODE GMA01(D4430,D4431)
OR	407 012 4406	DIODE 1SS133
D4433	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D4440	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
D4490	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
IC251	410 146 1203	IC UPD75306GF-225-3B9
IC501	409 003 9308	IC BU4051B
IC502	409 053 0409	IC TC9153AP
IC503	409 018 4909	IC LA6458S
IC601	409 003 9308	IC BU4051B
IC900	409 039 9204	IC NJM78L05A
IC901	409 020 0906	IC LB1403N
L2501	614 028 4256	FILTER
PL251	614 045 9661	LAMP,12V,70MA
PL252	614 045 9661	LAMP,12V,70MA
Q4401	405 011 8609	TR 2SC1740S-S(Q4401,Q4402)
Q4410	405 000 2205	TR DTA144ES(Q4410~Q4412)
Q4413	405 000 6104	TR DTC144ES(Q4413~Q4415)
Q4417	405 011 8609	TR 2SC1740S-S
Q4418	405 000 6104	TR DTC144ES

REF.NO.	PART NO.	DESCRIPTION
Q4419	405 011 8609	TR 2SC1740S-S
Q4420	405 000 3103	TR DTC114ES(Q4420,Q4421)
Q4422	405 011 8609	TR 2SC1740S-S
Q4501	405 011 8609	TR 2SC1740S-S(Q4501,Q4502)
Q4601	405 011 8609	TR 2SC1740S-S(Q4601,Q4602)
S2501	614 220 5655	SWITCH,TACT,BAND
S2502	614 220 5655	SWITCH,TACT,TUNER MEMORY
S2503	614 220 5655	SWITCH,TACT,FM/TUNE MODE
S2504	614 220 5655	SWITCH,TACT,TUNING,UP
S2505	614 220 5655	SWITCH,TACT,TUNING,DOWN
S2506	614 220 5655	SWITCH,TACT,PRESET,UP
S2507	614 220 5655	SWITCH,TACT,PRESET,DOWN
S2508	614 220 5655	SWITCH,TACT,PLAY/PAUSE,CD
S2509	614 220 5655	SWITCH,TACT,STOP,CD
S2510	614 220 5655	SWITCH,TACT,REW,CD
S2511	614 220 5655	SWITCH,TACT,FWD,CD
S2512	614 220 5655	SWITCH,TACT,DISC SKIP
S2513	614 220 5655	SWITCH,TACT,REPEAT,CD
S2514	614 220 5655	SWITCH,TACT,MEMORY,CD
S2515	614 220 5655	SWITCH,TACT,RANDOM PLAY,CD
S2516	614 220 5655	SWITCH,TACT,INTRO SCAN,CD
S2517	614 220 5655	SWITCH,TACT,EDIT,CD
S2518	614 220 5655	SWITCH,TACT,FADE,CD
S4402	614 220 5655	SWITCH,TACT,FUNCTION,CD
S4403	614 220 5655	SWITCH,TACT,FUNCTION,TUNER
S4404	614 220 5655	SWITCH,TACT,FUNCTION,TAPE
S4405	614 220 5655	SWITCH,TACT,FUNCTION,VIDEO
S4406	614 220 5655	SWITCH,TACT,VOLUME,UP
S4407	614 220 5655	SWITCH,TACT,VOLUME,DOWN
VR501	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,100HZ
VR502	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,1KHZ
VR503	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,10KHZ
VR601	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,100HZ
VR602	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,1KHZ
VR603	614 221 4756	VR,SLIDE,GRAPHIC EQUALIZER,10KHZ
VR900	614 239 3871	VR,SLIDE,BALANCE,CONTROL
X2501	614 215 5561	RESONATOR,CERAMIC,4.19MHZ

BASSXPANDER/DUBBING SPEED-BEAT CANCEL/DOLBY NR SWITCH P.C. BOARD

REF.NO.	PART NO.	DESCRIPTION
83	614 245 7726	ASSY,PCB,BASSXPANDER/DUBBING SPEED-BEAT CANCEL/DOLBY NR SWITCH
CN610	614 035 4973	SOCKET,8P,FRONT P.C.B. (CN608)
S4410	614 240 8759	SWITCH,PUSH,DUBBING SPEED-BEAT CANCEL/DOLBY NR
S4411	614 240 8742	SWITCH,PUSH,BASSXPANDER

REGULATOR P.C. BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
84	614 245 7757	ASSY,PCB,REGULATOR
CN510	614 243 9562	ASSY,CONNECTOR-S,3P,POWER AMP. P.C.B.,CN620/CN720,CONNECTOR
CN620	614 020 1222	SOCKET,3P,POWER AMP.P.C.B. (CN720)
IC950	△409 001 7603	IC AH7612F
OR	△409 078 2402	IC L7812ML
OR	△409 122 6202	IC NJM7812FA
OR	△409 168 2107	IC UPC7812HF

POWER AMP. P.C. BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
85	614 245 7573	ASSY,PCB,POWER AMP
	614 203 7362	HEAT SINK,IC951 MTG.

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
	411 021 6405	SCR S-TPG BIN 3X8MM,IC951 MTG.
C761	403 065 8002	MT-PLLYEST 0.1U J 63V
C762	403 065 8002	MT-PLLYEST 0.1U J 63V
C861	403 065 8002	MT-PLLYEST 0.1U J 63V
C862	403 065 8002	MT-PLLYEST 0.1U J 63V
CN701	614 017 2126	PLUG,5P,FRONT P.C.B.,(CN605)
CN702	614 017 2133	PLUG,6P,FRONT P.C.B.,(CN606)
CN703	614 017 2102	PLUG,3P,FRONT P.C.B.,(CN607)
CN704	614 020 1246	SOCKET,5P,PHONES SOCKET P.C.B.
CN707	614 224 9864	SOCKET,VIDEO
CN708	614 218 0068	TERMINAL,SPEAKER
CN709	614 020 1239	SOCKET,4P,POWER TRANSFORMER, SECONDARY
CN720	614 017 2102	PLUG,3P,REGULATOR,P.C.B.(CN620)
D951	△407 004 9105	DIODE DSF10C(D951~D958,PAIR USE)
OR	△407 012 3300	DIODE 1SR35-200A
D959	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
D960	407 012 4406	DIODE 1SS133(D960,D961)
OR	407 007 9904	DIODE GMA01
D962	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
IC750	△409 296 7500	LA4280-A
IC951	△409 001 7603	IC AN7812F
OR	△409 078 2402	IC L7812ML
OR	△409 122 6202	IC NJM7812FA
OR	△409 168 2107	IC UPC7812HF
Q750	405 012 2002	TR 2SC1815-GR (Q750,Q850,Q950,Q951,PAIR USE)
OR	405 011 8609	TR 2SC1740S-S
OR	405 017 9709	TR 2SC3330-U
OR	405 020 7204	TR 2SC945A-K

POWER SWITCH P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
86	614 245 7597	ASSY.PCB,POWER SWITCH
	614 017 6964	TERMINAL BOARD
	614 208 4540	FUSE HOLDER
C972	△404 000 1607	CERAMIC 0.01U F 400V
OR	△404 033 3302	CERAMIC 0.01U M -
OR	△404 033 3401	CERAMIC 0.01U Z -
S901	△614 018 8967	SWITCH,POWER

POWER TRANSFORMER,SECONDARY P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
87	614 245 7634	ASSY.PCB,POWER TRANSFORMER, SECONDARY
	614 051 9808	LUG,GROUND
C971	403 057 3800	POLYESTER 0.1U M 50V
CN709	614 020 1246	SOCKET,5P,POWER AMP.P.C.B.
CN710	614 020 6555	SOCKET,3P,CD CONTROL P.C.B. (CN107)
CN721	614 226 9213	SOCKET,3P,CN710/CN107 CONNECTOR
R960	△402 045 1507	RESISTOR 0.47 J-1W

PHONES SOCKET P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
88	614 245 7658	ASSY.PCB,PHONES
CN704	614 020 1246	SOCKET,5P,POWER AMP. P.C.B.
CN712	614 035 1712	SOCKET,PHONES

DECK P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
89	614 244 4511	ASSY.PCB,DECK
	△614 130 6926	TUBE,20X2MM,R981 MTG.
C985	403 081 1209	POLYPRO 0.018U J 100V
CN001	614 017 2102	PLUG,3P,TAPE SELECT SWITCH
CN002	614 017 2133	PLUG,6P,TAPE MECHANISM SWITCHES
CN005	614 016 4084	PLUG,2P,HIGH SPEED TEST
CN006	614 020 8849	SOCKET,3P,TAPE OUT
CN007	614 020 6562	SOCKET,4P,MOTOR
CN008	614 020 6548	SOCKET,2P,STOP SWITCH P.C.B. (CN058)
CN009	614 223 0329	ASSY,CONNECTOR-S,4P,TAPE "A" HEAD
CN010	614 223 0336	ASSY,CONNECTOR-S,7P,TAPE "B" HEAD
CN717	614 017 2126	PLUG,5P,FRONT P.C.B.(CN604)
CN718	614 017 2164	PLUG,9P,FRONT P.C.B.(CN603)
D001	407 007 9904	DIODE GMA01(D001~D014,PAIR USE)
OR	407 012 4406	DIODE 1SS133
D015	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
D016	407 007 9904	DIODE GMA01(D016~D019 PAIR USE)
OR	407 012 4406	DIODE 1SS133
D099	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D501	407 007 9904	DIODE GMA01(D501,D502)
OR	407 012 4406	DIODE 1SS133
D601	407 007 9904	DIODE GMA01(D601,D602)
OR	407 012 4406	DIODE 1SS133
IC001	409 020 9107	IC LC4069UB
OR	409 051 3907	IC TC4069UBP
OR	409 059 3206	IC UPD4069UBC
IC501	409 121 8702	IC LA3246
IC502	409 145 8405	IC UPC1330HA
IC521	409 016 8701	IC LA3220
IC551	409 119 9803	IC CXA1101P
L501	614 029 3807	MX COIL
L502	614 027 8545	CHOKE
OR	614 210 3685	INDUCTOR,FERITE,3.3MHZ
L511	614 202 8865	FILTER,6.8MHZ
L512	614 029 3142	MX COIL,85KHZ
L601	614 029 3807	MX COIL
L602	614 027 8545	CHOKE
OR	614 210 3685	INDUCTOR,FERITE,3.3MHZ
L611	614 202 8865	FILTER,6.8MHZ
L612	614 029 3142	MX COIL,8.5KHZ
L981	614 212 0804	TRANSFORMER,OSC
Q001	405 001 7001	TR 2SA1015-GR(Q001,Q002)
OR	405 005 2002	TR 2SA733-P
Q003	405 011 8609	TR 2SC1740S-S
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q004	405 001 7001	TR 2SA1015-GR
OR	405 005 2002	TR 2SA733-P
Q005	405 011 8609	TR 2SC1740S-S
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q006	405 012 7403	TR 2SC2001-K
OR	405 013 1301	TR 2SC2120-Y
Q008	405 011 8609	TR 2SC1740S-S(Q008~Q010)
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q501	405 011 8609	TR 2SC1740S-S(Q501,Q502)
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q504	405 011 8609	TR 2SC1740S-S(Q504~Q510,PAIR USE)
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q601	405 011 8609	TR 2SC1740S-S(Q601,Q602)
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
Q604	405 011 8609	TR 2SC1740S-S(Q604-Q609,PAIR USE)
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q981	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q982	405 011 8609	TR 2SC1740S-S
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q983	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q984	405 011 8609	TR 2SC1740S-S
OR	405 012 2002	TR 2SC1815-GR
OR	405 020 7204	TR 2SC945A-K
Q985	405 011 1907	TR 2SC1627-Y
SVR001	614 204 1871	SEMI-FIXED RESISTOR,2K OHM
SVR501	614 003 6183	SEMI-FIXED RESISTOR, (SVR501-SVR503)
SVR504	614 003 6237	SEMI-FIXED RESISTOR
SVR601	614 003 6183	SEMI-FIXED RESISTOR, (SVR601-SVR603)
SVR604	614 003 6237	SEMI-FIXED RESISTOR

STOP SWITCH P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
90	614 244 6676	ASSY.PCB.STOP SWITCH
CN058	614 020 6548	SOCKET,2P,DECK P.C.B.(CN008)
S008	614 203 7911	SWITCH,STOP

CD MAIN P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
91	614 240 8469	ASSY.PCB.CD MAIN
CN101	614 017 3840	PLUG,5P,PICKUP SENSOR
CN102	614 017 3871	PLUG,8P,PICKUP ACTUATOR
CN103	614 017 3857	PLUG,6P,SLED/SPINDLE MOTOR & LIMIT SWITCH
CN104	614 017 3925	PLUG,13P,CD CONTROL P.C.B.(CN106)
CN105	614 017 2591	PLUG,8P,CD CONTROL P.C.B.(CN112)
CN106	614 017 2553	PLUG,4P,TEST POINT
IC101	409 245 4802	IC LA9210M
IC102	△409 247 0000	IC LA6524
IC104	409 248 8708	IC LC7866E
IC105	409 262 1709	IC LC7883KM
IC106	409 241 5506	IC XRA15218F
OR	409 192 7109	IC BA15218F
Q1101	405 002 0308	TR 2SA1037K-R,LASER DRV
Q1102	405 014 4509	TR 2SC2412K-R
Q1501	405 014 4509	TR 2SC2412K-R,DAC VREF REG
R1101	401 037 5400	MT-GLAZE 1K JA 1/10W
R1102	401 036 9607	MT-GLAZE 56 JA 1/8W(R1102,R1103)
R1104	401 037 9309	MT-GLAZE 18K JA 1/10W
R1105	401 038 3702	MT-GLAZE 33K JA 1/10W
R1106	401 038 0800	MT-GLAZE 22K JA 1/10W
R1109	401 037 5608	MT-GLAZE 10K JA 1/10W
R1111	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1112	401 037 5707	MT-GLAZE 100K JA 1/10W
R1114	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1115	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1116	401 038 3702	MT-GLAZE 33K JA 1/10W
R1117	401 038 5409	MT-GLAZE 390K JA 1/10W (R1117,R1118)
R1119	401 037 6902	MT-GLAZE 120K JA 1/10W
R1121	401 038 6505	MT-GLAZE 47K JA 1/10W
R1122	401 038 0800	MT-GLAZE 22K JA 1/10W
R1124	401 037 6704	MT-GLAZE 1.2K JA 1/10W

REF.NO.	PART NO.	DESCRIPTION
R1125	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1126	401 037 5608	MT-GLAZE 10K JA 1/10W
R1127	401 038 9902	MT-GLAZE 750K JA 1/10W
R1128	401 036 1908	MT-GLAZE 220K JA 1/8W
R1131	401 038 0800	MT-GLAZE 22K JA 1/10W
R1132	401 038 7908	MT-GLAZE 560K JA 1/10W
R1133	401 037 9408	MT-GLAZE 180K JA 1/10W
R1134	401 038 2309	MT-GLAZE 270K JA 1/10W
R1135	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1136	401 037 6902	MT-GLAZE 120K JA 1/10W
R1138	401 037 5707	MT-GLAZE 100K JA 1/10W (R1138,R1139)
R1140	401 156 1505	MT-GLAZE 6.8M JA 1/10W
R1141	401 037 5608	MT-GLAZE 10K JA 1/10W
R1142	401 037 5707	MT-GLAZE 100K JA 1/10W (R1142,R1143)
R1144	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1145	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1146	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1147	401 038 9308	MT-GLAZE 68K JA 1/10W
R1201	401 038 5508	MT-GLAZE 4.7 JA 1/10W (R1201,R1203)
R1204	401 037 5103	MT-GLAZE 10 JA 1/10W
R1401	401 037 5202	MT-GLAZE 100 JA 1/10W
R1402	401 037 5806	MT-GLAZE 1M JA 1/10W
R1403	401 038 0909	MT-GLAZE 220K JA 1/10W
R1405	401 038 6604	MT-GLAZE 470K JA 1/10W (R1405,R1406)
R1407	401 035 5204	MT-GLAZE 10K JA 1/8W
R1408	401 038 0602	MT-GLAZE 220 JA 1/10W
R1501	401 038 3702	MT-GLAZE 33K JA 1/10W
R1502	401 038 9407	MT-GLAZE 680K JA 1/10W
R1503	401 038 7601	MT-GLAZE 560 JA 1/10W
R1504	401 036 9904	MT-GLAZE 560 JA 1/8W
R1505	401 035 4603	MT-GLAZE 100 JA 1/8W
R1901	401 037 5004	MT-GLAZE 0.000 ZA 1/10W (R1901,R1902)
R1951	401 035 4108	MT-GLAZE 0.000 ZA 1/8W (R1951-R1988)
SVR11	614 223 1906	POTENTIOMETER,10K OHM
X1401	614 231 2667	RESONATOR,16.93MHZ

CD CONTROL P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
92	614 245 7719	ASSY.PCB.CD CONTROL
OR	△614 121 6829	HEAT SINK,IC107 MTG.
OR	△614 121 5891	HEAT SINK,IC107 MTG.
	411 021 6405	SCR S-TPG BIN 3X8MM,IC107 MTG.
C1301	403 196 9602	DL-ELECT 0.047F Z 5.5V.BACK UP
CN106	614 017 3925	PLUG,13P,CD MAIN P.C.B.(CN104)
CN107	614 017 2102	PLUG,3P,POWER TRANSFORMER, SECONDARY(CN710)
CN108	614 227 0011	SOCKET,10P,FRONT P.C.B.(CN602)
CN109	614 240 2467	SOCKET,13P,FRONT P.C.B.(CN601)
CN110	614 035 4911	SOCKET,2P,RESET P.C.B.(CN113)
CN111	614 017 3857	PLUG,6P,DISC TABLE MOTOR(CN003)
CN112	614 017 3871	PLUG,8P,POWER SUPPLY(CN105)
D1601	△407 004 9105	DIODE DSF10C (D1601-D1604,PAIR USE)
OR	△407 012 3300	DIODE 1SR35-200A
D1605	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1606	407 005 4505	DIODE DS442X
OR	407 013 7109	DIODE 1S2473
IC103	410 149 9909	IC UPD75112GF-751-38E
IC107	△409 189 4203	IC M5278D05

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
IC107	△409 169 7804	IC NJM78M05FA
OR	△409 078 1900	IC L7805ML
IC108	△409 040 1105	IC NJM79L05A
IC121	△409 018 5500	IC LA6510
ICP11	△614 205 2914	IC PROTECTOR ICP-N25
ICP12	△614 205 2914	IC PROTECTOR ICP-N25
Q1111	405 006 1806	TR 2SA933S-R
Q1112	405 000 4407	TR DTC124ES(Q1112,Q1113)
Q1311	405 006 1806	TR 2SA933S-R
Q1312	405 011 8609	TR 2SC1740S-S(Q1312,Q1313)
Q1321	405 000 4407	TR DTC124ES(Q1321,Q1322)
Q1502	405 033 6805	TR 2SD1468S-S(Q1502,Q1503)
OR	405 021 0600	TR 2SD1012-G-SPA
R1621	△402 060 5306	RESISTOR 1 J-1/2W
R1622	△402 060 5306	RESISTOR 1 J-1/2W
X1301	614 215 5523	RESONATOR,CERAMIC,4.19MHZ
OR	614 215 5561	RESONATOR,CERAMIC,4.19MHZ

IR,REMOTE CONTROL SENSOR P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
93	614 245 7733	ASSY.PCB,IR,REMOTE CONTROL SENSOR
CN256	614 035 4928	SOCKET,3P,FRONT P.C.B.(CN255)
D2600	407 152 1303	PHOTO DIODE SPS-422-1

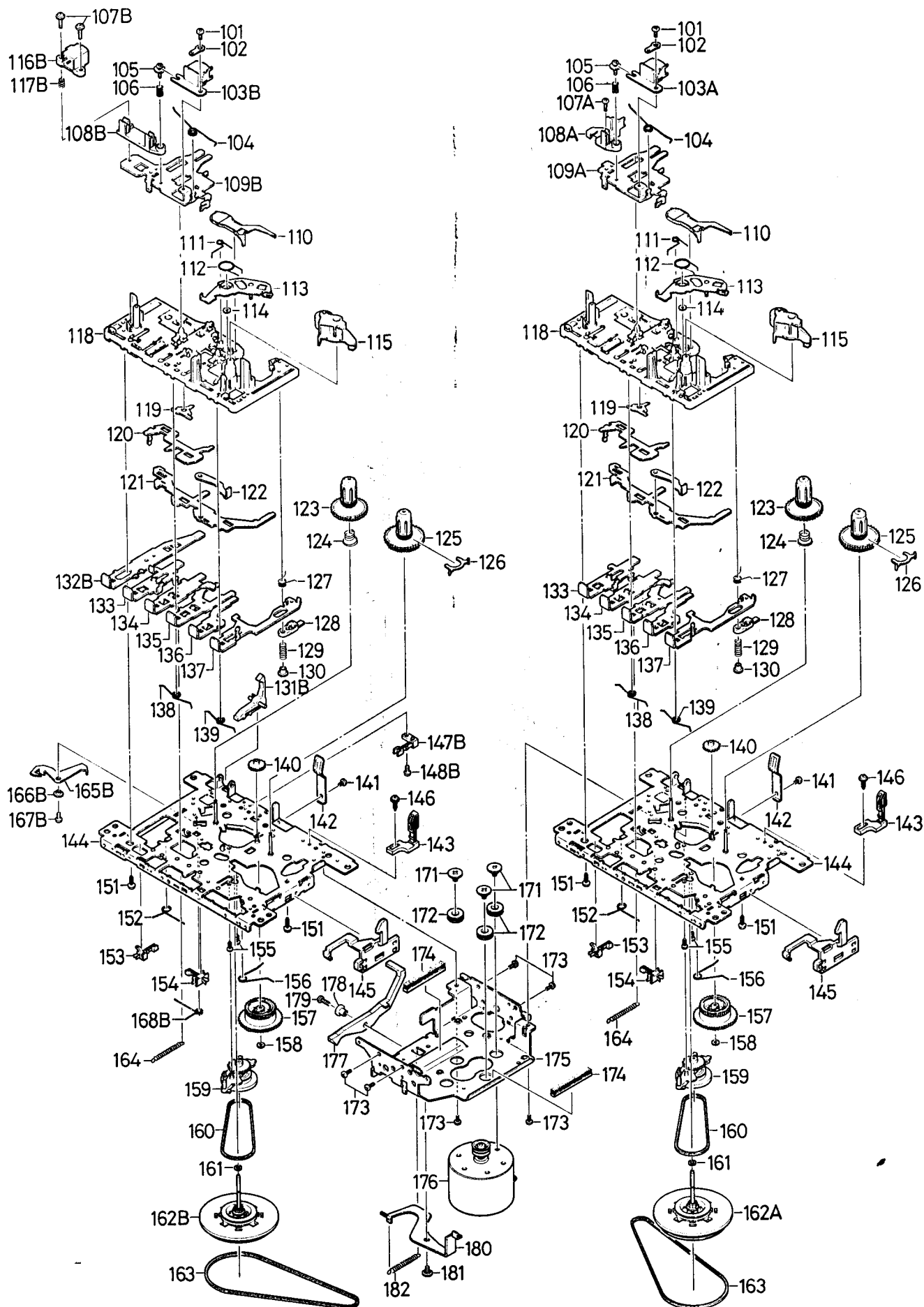
RESET SWITCH P.C.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
94	614 245 7740	ASSY.PCB,RESET
CN113	614 035 4911	SOCKET,2P,CD CONTROL P.C.B. (CN110)
S1301	614 221 8327	SWITCH,TACT,RESET,ALL CLEAR

DISC SELECT SWITCH

REF.NO.	PART NO.	DESCRIPTION
95	614 245 7764	ASSY.PCB,DISC SELECT SWITCH
S2519	614 220 5655	SWITCH,TACT,DISC SELECT 1
S2520	614 220 5655	SWITCH,TACT,DISC SELECT 2
S2521	614 220 5655	SWITCH,TACT,DISC SELECT 3
S2522	614 220 5655	SWITCH,TACT,DISC SELECT 4
S2523	614 220 5655	SWITCH,TACT,DISC SELECT 5

EXPLODED VIEW (TAPE MECHANISM)

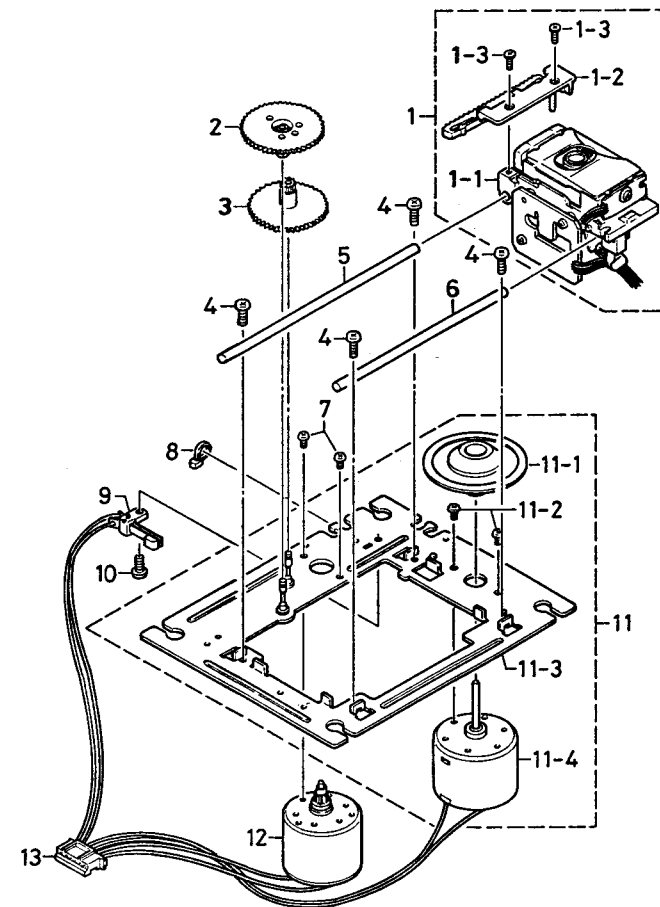
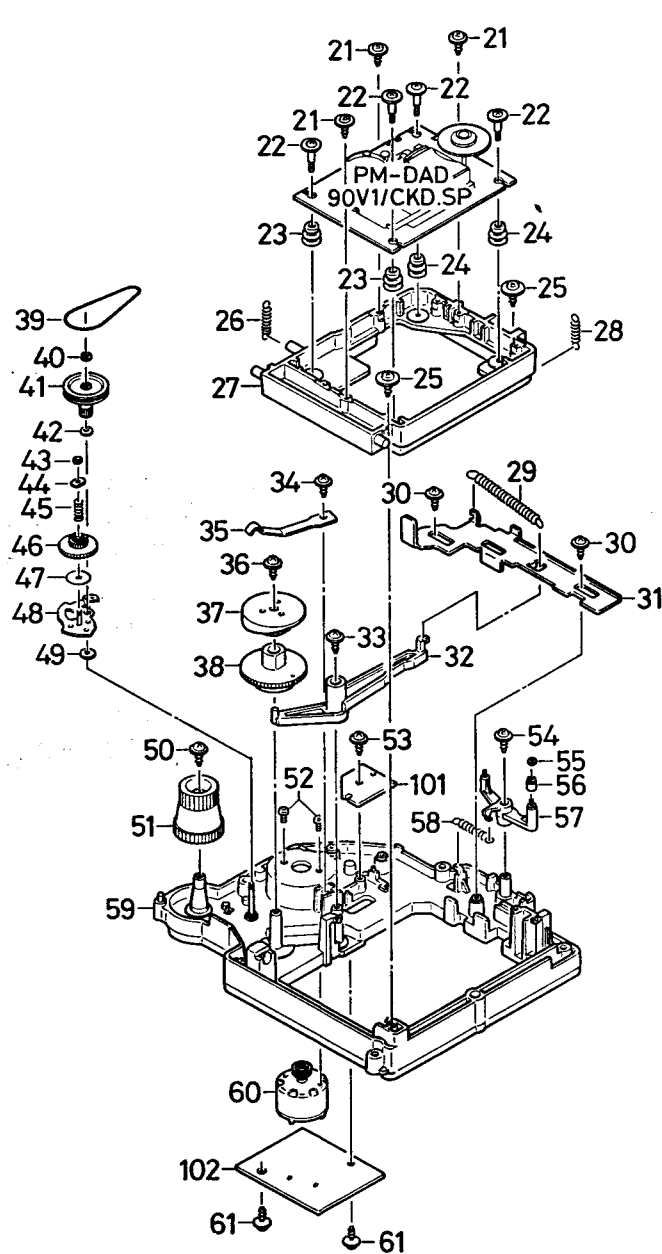
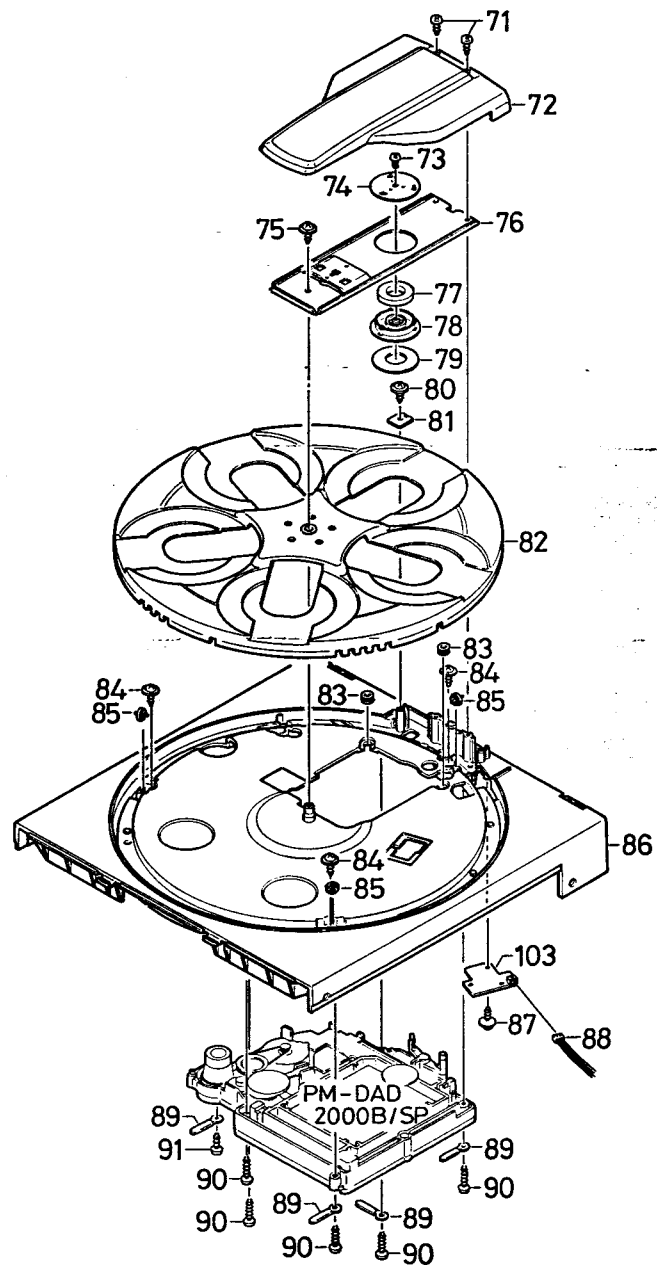


PARTS LIST

TAPE MECHANISMCTM-MC949TN/SP)

REF.NO.	PART NO.	DESCRIPTION
101	412 031 6607	SPECIAL SCREW,2X3MM.(+)BIND
102	614 208 0276	LUG,HEAD
103A	614 208 4069	HEAD,PLAY,TAPE"A"
103B	614 208 4052	HEAD,RECORD/PLAY,TAPE"B"
104	614 210 3432	SPRING WIRE,HEAD PANEL
105	412 026 1709	SPECIAL SCREW,2X7MM,HEAD AZIMUTH
106	614 151 7162	SPRING COIL,HEAD AZIMUTH
107A	412 026 1501	SPECIAL SCREW,2X6MM,TAPE"A"
107B	412 036 8200	SPECIAL SCREW,2X7.5MM.(+,-)CUP, TAPE"B"
108A	614 146 5111	BRACKET TAPE GUIDE,HEAD BASE, TAPE"A"
108B	614 196 0470	BRACKET HEAD,TAPE"B"
109A	614 211 6944	SLIDE,HEAD PANEL,TAPE"A"
109B	614 210 6822	SLIDE,HEAD PANEL,TAPE"B"
110	614 140 1614	LEVER,SENSING LEVER
111	614 152 1299	SPRING WIRE,CONTROL
112	614 151 8312	SPRING PLATE,GEAR PLATE
113	614 070 0916	LEVER ASSY
114	412 026 1808	SPECIAL WASHER,1.45X3.8X0.5MM
115	614 210 3302	LEVER PINCH ROLLER ASSY
116B	614 021 8831	MAGNETIC HEAD,ERASE,TAPE"B"
117B	614 151 5090	SPRING COIL,ERASE HEAD,TAPE"B"
118	614 067 3258	SUB CHASSIS ASSY
119	614 129 0676	BOSS,PLAY/REW CHANGE STOPPER
120	614 201 1744	SLIDE,SWITCH ACTUATOR
121	614 201 1737	SLIDE,PUSH BUTTON ACTUATOR
122	614 140 1539	LEVER,EJECT KICK
123	614 211 3868	REEL ASSY,SUPPLY
124	614 205 1337	SPRING COIL,BACK TENSION
125	614 211 3875	REEL ASSY,TAKE UP
126	614 195 5094	LEVER,SENSOR,TAKE-UP REEL
127	614 152 1244	SPRING WIRE,PAUSE CONTROL
128	614 208 0320	LEVER,PAUSE
129	614 151 7186	SPRING COIL,PAUSE LEVER
130	614 129 0669	BOSS,PAUSE STOPPER
131B	614 140 1508	LEVER,RECORD SAFETY,TAPE"B"
132B	614 196 0500	LEVER,RECORD BUTTON,TAPE"B"
133	614 196 0555	LEVER,PLAY BUTTON
134	614 196 0517	LEVER,REW BUTTON
135	614 196 0524	LEVER,F.FWD BUTTON
136	614 196 0531	LEVER,STOP/EJECT BUTTON
137	614 208 0313	LEVER,PAUSE BUTTON
138	614 152 1251	SPRING WIRE,BUTTON LEVER
139	614 152 1268	SPRING WIRE,BUTTON LEVER
140	614 134 9046	GEAR,F.FWD
141	412 026 1402	SPECIAL SCREW,2X3MM,TAPPING
142	614 151 8299	SPRING PLATE,PACK SPRING,CASSETTE
143	614 209 3849	SWITCH,TAPE SELECT,NORMAL/CRO2, S001,S002
144	614 067 2770	CHASSIS ASSY
145	614 140 1522	LEVER,EJECT SLIDE
146	412 023 0903	SPECIAL SCREW,2X5MM,TAPE SELECT SWITCH
147B	614 196 9756	SWITCH,RECORD,S005,TAPE"B"
148B	614 124 4594	SPECIAL SCREW,2X5MM,TAPPING, TAPE"B"
151	412 026 2201	SPECIAL SCREW,2X5MM,TAPPING
152	614 152 1282	SPRING WIRE,PAUSE LEVER
153	614 024 1693	SWITCH,MOTOR POWER,S006,S007
154	614 195 4424	SWITCH,PLAY,S003,S004
155	412 026 2300	SPECIAL SCREW,2X4.5MM,CAMERA TAPPING
156	614 152 1275	SPRING WIRE,EJECT ACTUATOR
157	614 134 9053	GEAR,CAM
158	412 013 5000	SPECIAL WASHER,1.2X3.8X0.3MM
159	614 069 2273	PULLEY ASSY,RF CLUTCH
160	614 195 5087	SQUARE BELT,RF

REF.NO.	PART NO.	DESCRIPTION
161	412 013 8902	SPECIAL WASHER,2X3.5X0.3MM
162A	614 204 8672	FLYWHEEL ASSY,TAPE"A"
162B	614 068 1871	FLYWHEEL DISK ASSY,TAPE"B"
163	614 133 4127	SQUARE BELT,MAIN
164	614 151 4703	SPRING COIL,PLAY BUTTON
165B	614 197 0219	LEVER,RECORD SWITCH,TAPE"B"
166B	614 197 0202	BOSS,SWITCH LEVER,TAPE"B"
167B	412 026 2003	SPECIAL SCREW,2X4MM,TAPPING, TAPE"B"
168B	614 152 1305	SPRING WIRE,RECORD BUTTON
171	412 026 1907	SPECIAL SCREW,MOTOR MTG.
172	614 126 6831	CUSHION,RUBBER,MOTOR
173	412 026 2003	SPECIAL SCREW,2X4MM
174	614 126 6848	CUSHION,ANTI-VIBRATION,FELT MAT
175	614 122 9553	BRACKET MOTOR
176	614 211 3752	COMMUTATE MOTOR ASSY
177	614 140 1676	LEVER,PAUSE KICK LEVER
178	614 129 0683	BOSS,COLLAR,PAUSE KICK LEVER
179	412 031 7901	SPECIAL SCREW,2X6MM,TAPPING
180	614 139 8679	LEVER,PAUSE KICK
181	412 005 8101	SPECIAL SCREW,PAUSE KICK LEVER
182	614 151 4758	SPRING COIL,PAUSE KICK LEVER

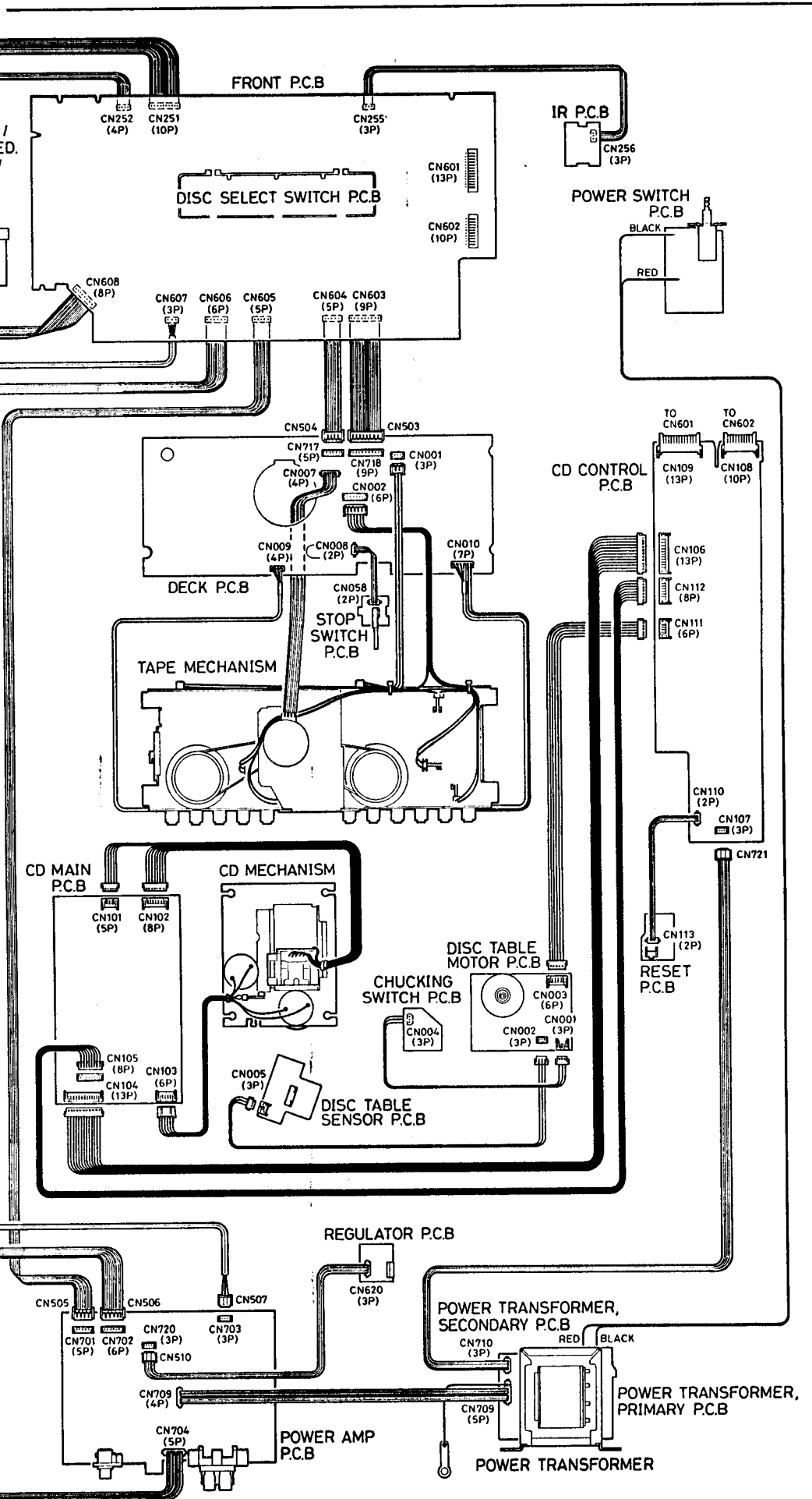


PARTS LIST

CD MECHANISM(PH-DAD2000/SP)

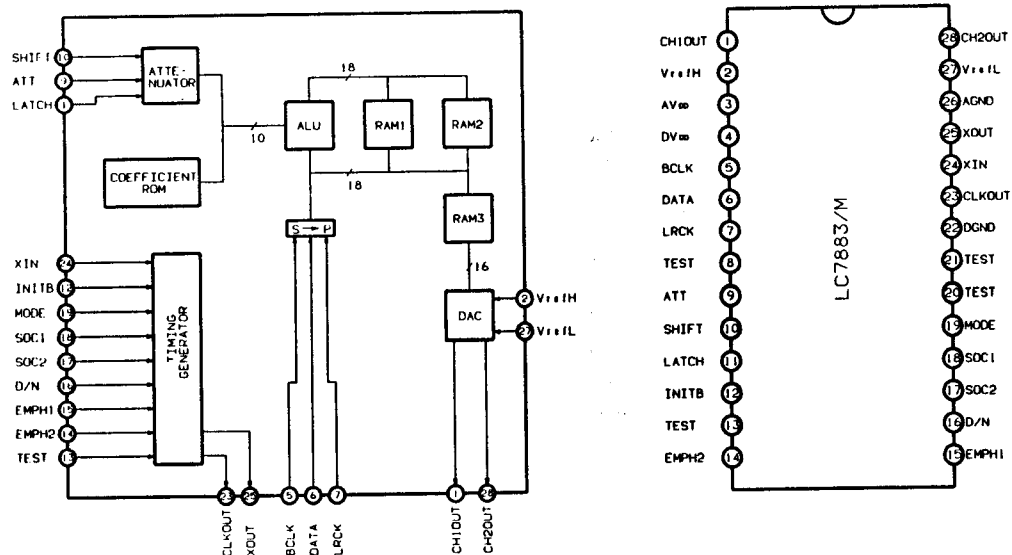
REF.NO.	PART NO.	DESCRIPTION
1	614 246 3673	ASSY,PICKUP WITH RACK GEAR
	620 207 1466	ASSY,PICKUP,LASER,91NC(1-1)
	620 205 9426	PLATE,RACK GEAR(1-2)
	411 138 1805	SCR FLT PCS 2X5MM,RACK GEAR MTG. (1-3)
2	620 206 7933	GEAR,POWER
3	620 205 9365	GEAR,MIDDLE
4	412 037 2900	SPECIAL SCREW,PICKUP SHAFT MTG.
5	620 133 4159	SHAFT,PICKUP,RAIL (LONG)
6	620 205 9471	GUIDE,BAR,PICKUP SHAFT(SHORT)
7	411 106 7709	SCR PAN PCS 1.7X2.5MM,SLED MOTOR
8	620 207 6010	CLAMP,WIRE MTG.
9	620 015 8633	LEAF SWITCH,LIMIT(SW1)
10	412 037 2900	SPECIAL SCREW,LIMIT SWITCH MTG.
11	614 246 3703	ASSY,CHASSIS WITH SPINDLE MOTOR & TURNTABLE
	620 211 2619	ASSY,TURNTABLE,CD(11-1)
	411 106 7709	SCR PAN PCS 1.7X2.5MM,SPINDLE MOTOR(11-2)
	620 216 3635	ASSY,CHASSIS,BASE(11-3)
	620 206 7773	MOTOR,2.OV,0.2W,SPINDLE(11-4)
12	614 246 3697	ASSY,MOTOR,SLED MOTOR WITH GEAR
13	614 245 8877	ASSY,CONNECTOR-S,6P,MOTOR & LIMIT SWITCH
21	620 123 0772	SCREW WASHER,2.6X6X0.8MM,BASE MECHANISM,CD PLAYER
22	412 043 3007	SPECIAL SCREW,FLOATING
23	620 212 5145	CUSHION,RUBBER,FLOATING,FRONT
24	620 212 5138	CUSHION,RUBBER,FLOATING,BACK
25	412 032 6408	SPECIAL SCREW,SUB CHASSIS
26	614 234 1391	SPRING,TENSION,LEFT,BASE MECHANISM
27	614 240 2689	CHASSIS,SUB
28	614 234 9588	SPRING,TENSION,RIGHT,BASE MECHANISM
29	614 234 1407	SPRING,TENSION,LOCK SLIDE
30	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,LOCK SLIDE
31	614 240 2887	SLIDE,LOCK SLIDE
32	614 240 9459	LEVER,LOCK LEVER
33	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,LOCK LEVER
34	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,SPRING PLATE
35	614 230 1692	SPRING,PLATE,CAM GEAR
36	412 032 4608	SPECIAL SCREW,CAM GEAR
37	614 228 4094	PULLEY,CAM
38	614 227 6594	GEAR,CAM
39	614 228 3257	BELT,SQUARE,LOADING
40	614 127 1576	WASHER,IDLER
41	614 227 6624	PULLEY,IDLER
42	412 012 7609	SPECIAL WASHER,GNW 3.1X5.4X0.25MM,IDLER THRUST
43	412 045 6402	SPECIAL WASHER,1.7X3.2X0.5MM, MOVING GEAR
44	412 041 6000	SPECIAL WASHER,MOVING GEAR
45	614 245 2530	SPRING,COMP,MOVING GEAR
46	614 227 6600	GEAR,MOVING
47	412 044 7905	SPECIAL WASHER,2X13X0.13MM,M-GEAR THRUST
48	614 244 5303	ASSY,LEVER,MOVING
49	412 045 5900	SPECIAL WASHER,GNW 3.2X8X0.25MM, MOVING LEVER THRUST
50	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,DISC TABLE
51	614 240 2856	GEAR,DISC TABLE
52	411 155 1901	SCR PAN+W 2.6X5MM,DISC TABLE MOTOR MTG.

REF.NO.	PART NO.	DESCRIPTION
53	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,CHUCKING DETECTOR SWITCH P.C.BOARD
54	620 123 0772	SCREW WASHER,2.6X6X0.8MM,PINCH LEVER
55	412 022 0607	SPECIAL WASHER,GNW,ROLLER
56	614 227 6440	ASSY,ROLLER
57	614 236 2808	ASSY,LEVER,PINCH LEVER ASSY
58	614 234 9588	SPRING,TENSION,PINCH LEVER
59	614 243 7537	ASSY,CHASSIS
60	614 231 3626	ASSY,MOTOR,DISC TABLE
61	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,DISC TABLE MOTOR P.C.BOARD
71	411 021 3701	SCR S-TPG BIN 3X10MM,CHUCK COVER FIX
72	614 240 2535	COVER,CHUCK
73	411 022 7500	SCR S-TPG PAN 2X4MM,CHUCK PLATE
74	614 233 0227	PLATE,CHUCK
75	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,CHUCK BRACKET
76	614 240 8933	BRACKET-M,CHUCK
77	614 210 4514	MAGNET,CHUCK PRESSURE
OR	614 233 1774	MAGNET,CHUCK PRESSURE
78	614 230 2309	PULLEY,CHUCK
79	614 232 4684	SHEET,CHUCK PULLEY
80	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,PROTECT DISC TABLE BRACKET
81	614 233 7943	BRACKET-M,PROTECT,DISC TABLE
82	614 240 2870	TURNTABLE,DISC TABLE
83	614 124 8509	RUBBER CUSHION,REDUCE SHOCK
84	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,ROLLER
85	614 227 6457	ASSY,ROLLER,DISC TABLE SUPPORT
86	614 240 2559	PANEL,TOP,DISC TABLE
87	411 020 9902	SCR S-TPG BRZ+FLG 3X8MM,SENSOR P.C.BOARD MTG.
88	614 243 9968	ASSY,CONNECTOR-S,SENSOR P.C.BOARD
89	614 129 9136	LUG,LEAD MTG.
90	411 021 4906	SCR S-TPG BIN 3X20MM,LUG
91	411 021 6405	SCR S-TPG BIN 3X8MM,LEAD MTG.
101	614 243 9531	ASSY,P.C.BOARD,CHUCKING SWITCH
	614 228 9792	SWITCH,LEVER,S003,CHUCKING RELEASE DETECTOR SWITCH
	614 224 2575	SWITCH,LEVER,S002,CHUCKING DETECTOR SWITCH
	614 243 9951	ASSY,CONNECTOR-S,3P,CN004,DISC TABLE MOTOR P.C.B
102	614 243 7469	ASSY,PCB,DISC TABLE MOTOR
	614 017 3826	PLUG,3P,CHUCKING SWITCH(CN001)
	614 017 3826	PLUG,3P,SENSOR,CHUCKING(CN002)
	614 017 3857	PLUG,6P,MOTOR,DISC TABLE(CN003)
103	614 243 9524	ASSY,PCB,SENSOR,DISC TABLE
	614 017 3826	PLUG,3P,(CN005)
	407 137 8006	PHOTO COUPLE 6P1A53HR,PC001 PHOT SENSOR
	401 026 9600	CARBON 470 JA 1/6W

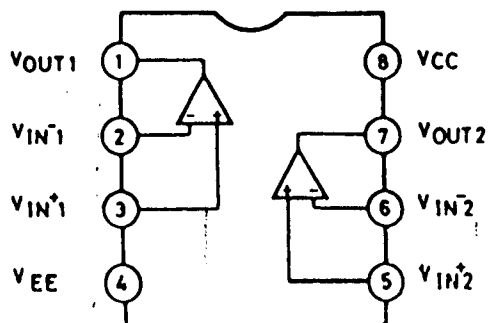


IC BLOCK DIAGRAM

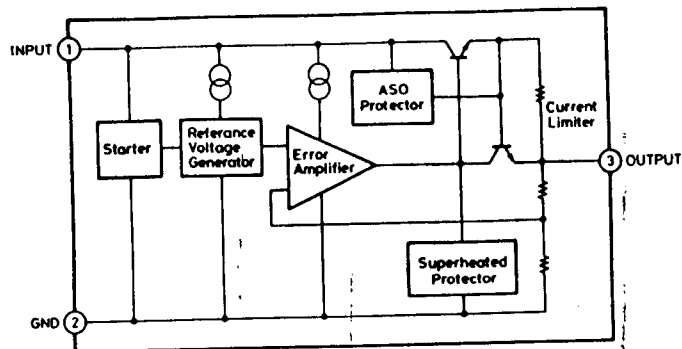
IC105 LC7883KM (D/A CONVERTER WITH DIGITAL FILTER)



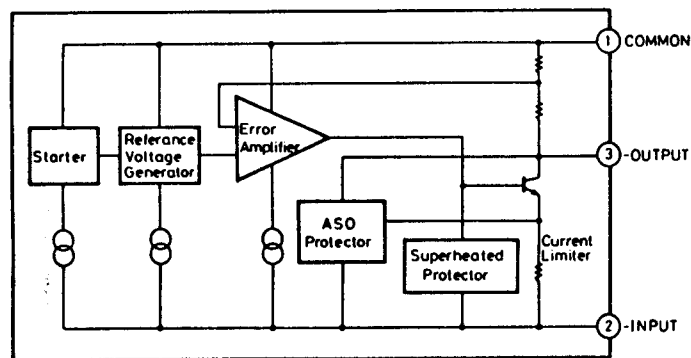
IC106 XRA15218F (DUAL OPERATIONAL AMPLIFIER)



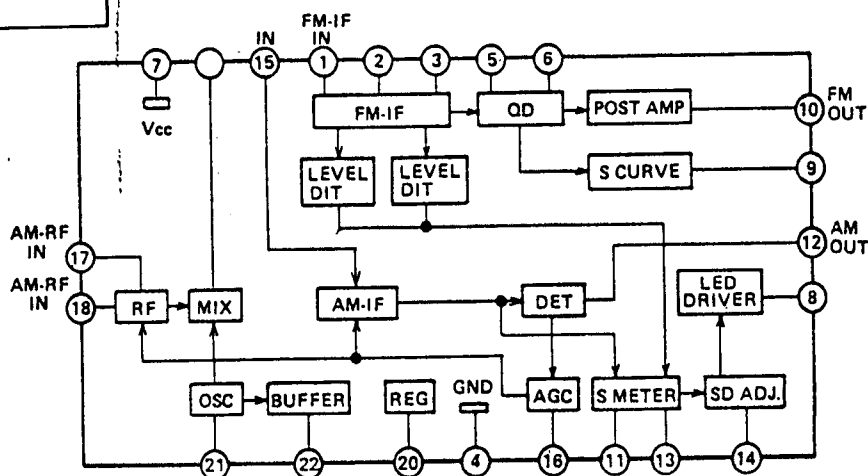
IC107 L78M05 (5V REGULATOR)



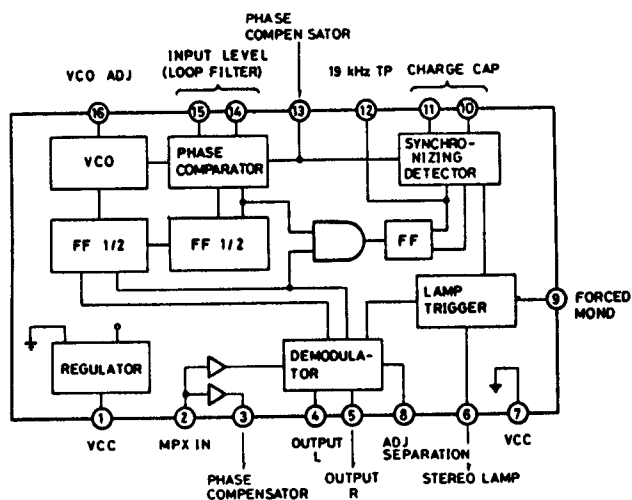
IC108 L79M05 (-5V REGULATOR)



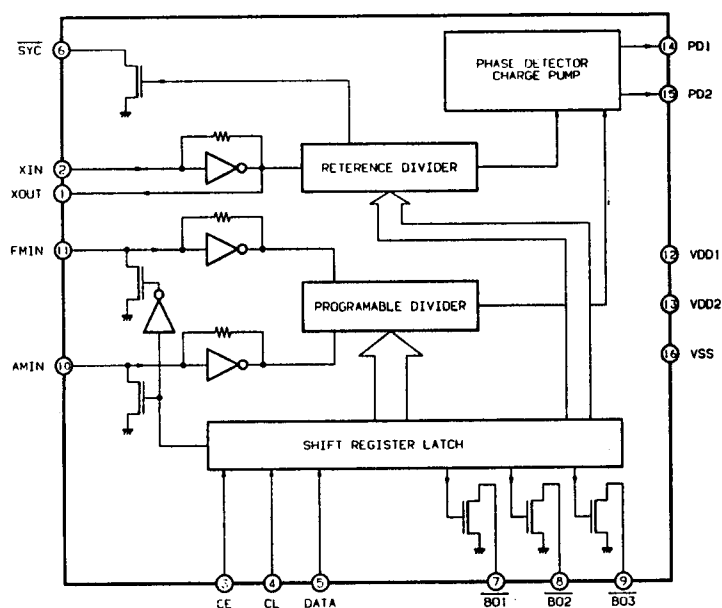
IC201 LA1265 (TUNER SYSTEM)



IC BLOCK DIAGRAM

IC202 LA3361 (PLL FM MPX. STEREO DEMODULATOR)

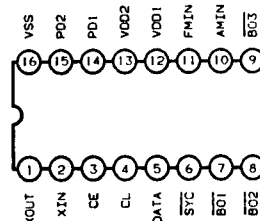
IC203 LM7001 (ELECTRONIC TUNING DIRECT PLL FREQUENCY SYNTHESIZER)



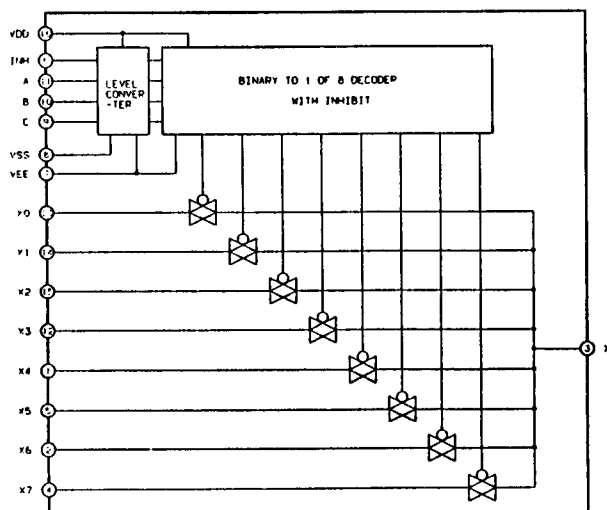
```

SYC      , CLOCK CONTROLLER (400KHZ)
XIN XOUT , XTAL OSC (7.2MHZ)
FMIN AMIN , LOCAL OSCILLATION SIGNAL INPUT
CD CL DATA , DATA INPUT
B01 B02 B03 , BAND DATA OUTPUT
VDD1 VDD2 VSS , POWER SUPPLY (VDD2 IS BACK-UP BATTERY)
PD1 PD2 , CHARGE PUMP OUTPUT

```

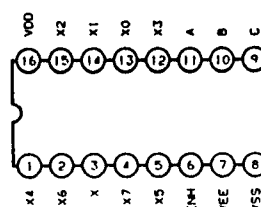


IC501, 601 BU4051B (ANALOGURE MULTIPLEXERS/DEMULTIPLEXERS)



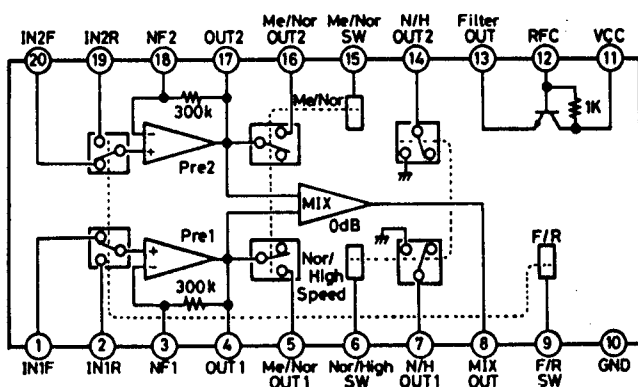
[INH][B1]	A	B	C	ON SWITCH
L	L	L	L	x0
L	H	L	L	x1
L	L	H	L	x2
L	H	H	L	x3
L	L	L	H	x4
L	H	L	H	x5
L	L	H	H	x6
L	H	H	H	x7
H	x	x	x	NOTE

X : DON.T CARE

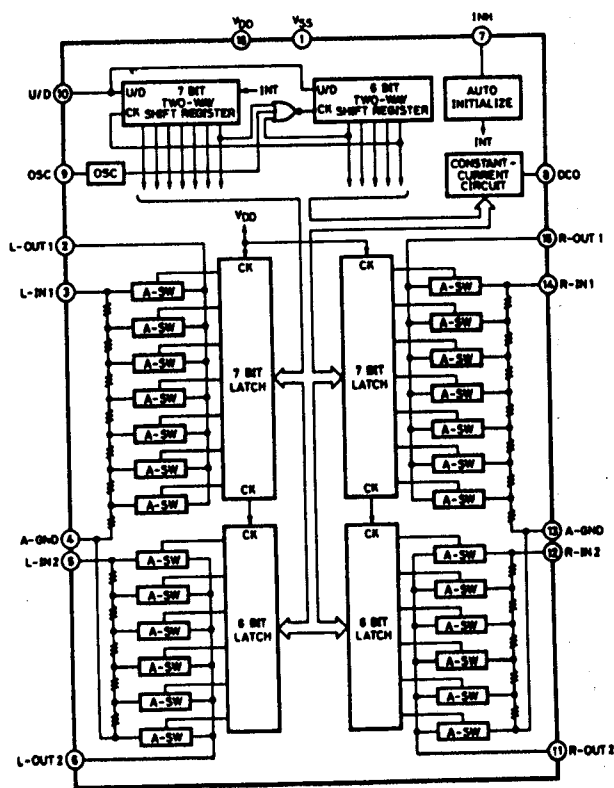


IC BLOCK DAIGRAM

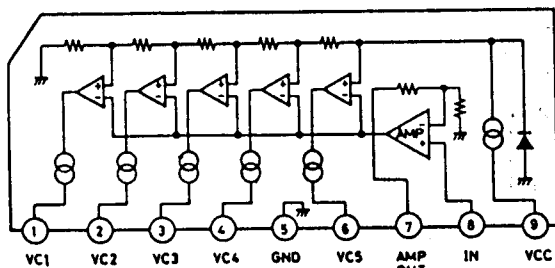
IC501 LA3246
(PRE & MIXING AMP. WITH ELECTRICAL SWITCH)



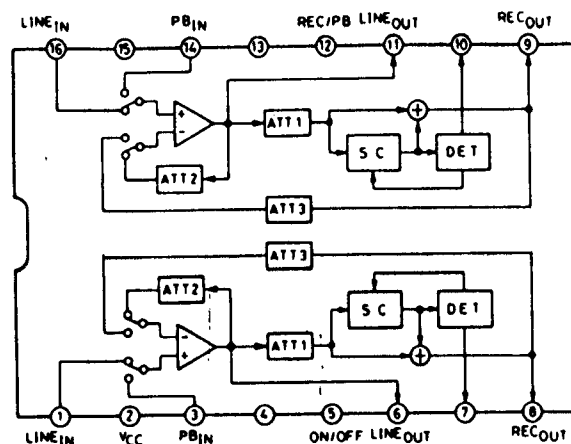
IC502 TC9153AP (ELECTRONIC VOLUME)



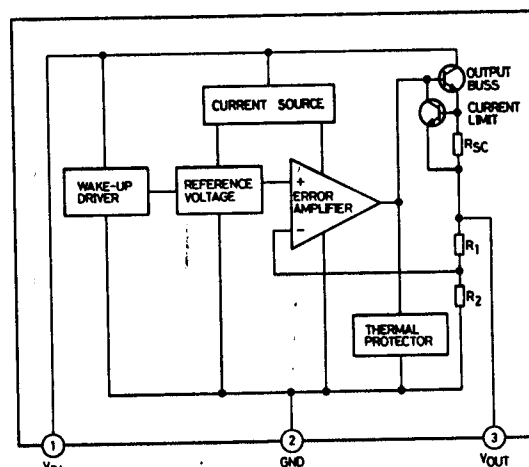
IC901 LB1403N (LED LEVEL METER)



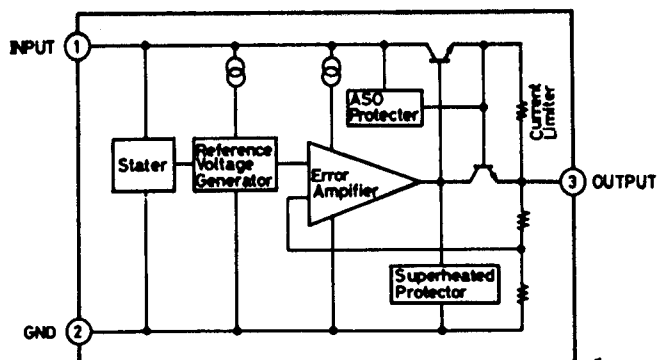
IC551 CXA1101P
(DOLBY B-TYPE NOISE REDUCTION)



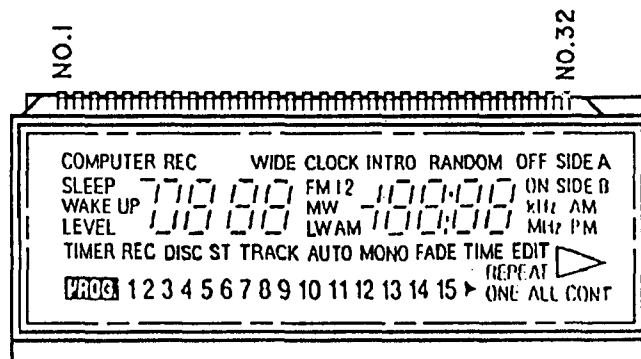
IC900 NJM78L05A (5V REGULATOR)



IC951 L7812ML (VOLTAGE REGULATOR)



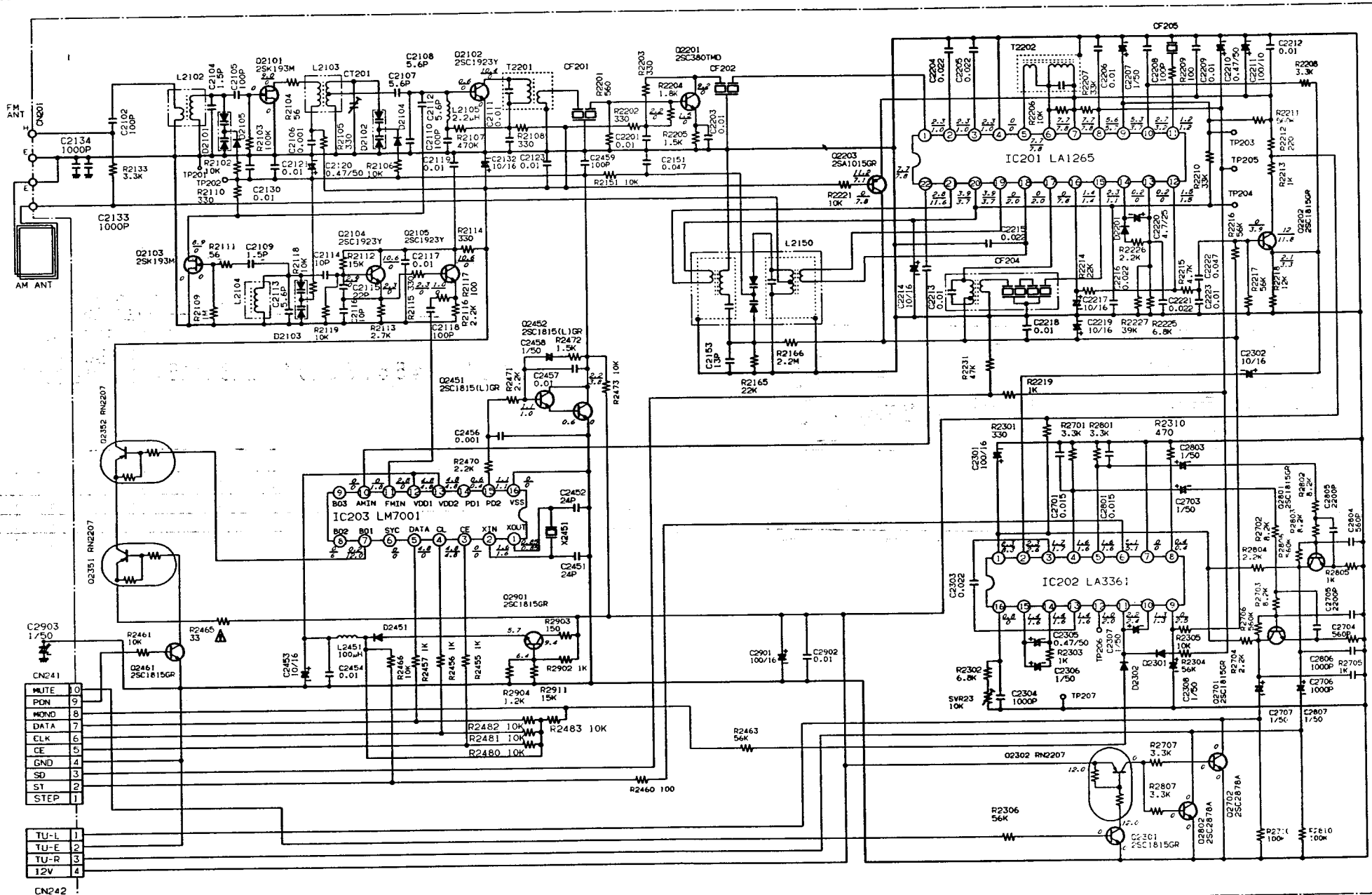
LCD DESCRIPTION



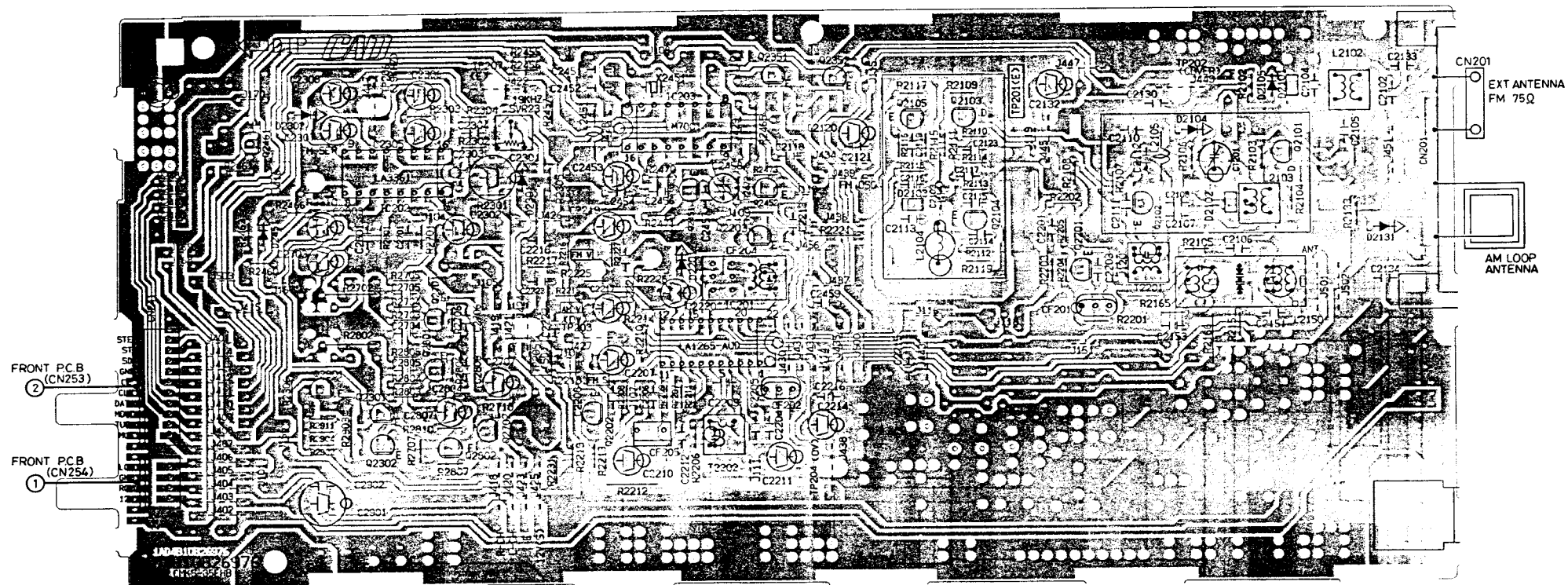
COMPUTER REC_a WIDE CLOCK INTRO RANDOM OFF SIDE A
 SLEEP_h 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 FM:12 5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 ON SIDE B
 WAKE UP 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 MW kHz AM
 LEVEL 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 LW AM 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 MHz PM
 TIMER REC DISC ST TRACK AUTO MONO FADE TIME EDIT
 REPEAT
PROG. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 ▶ ONE ALL CONT

NO.	COM. 1	COM. 2	COM. 3	COM. 4	NO.	COM. 1	COM. 2	COM. 3	COM. 4
1	CONT	ALL	ONE	REPEAT	17	INTRO	5b.c	5g	
2	13	14	15	▶	18	6f	6g	6e	6d
3	12	11	10	9	19	6a	6b	6c	MONO
4	5	6	7	8	20	7f	7g	7e	7d
5	4	3	2	1	21	7a	7b	7c	FADE
6	SLEEP	WAKE UP	TIMER	REC	22	RANDOM	:		TIME
7	COMP. REC	LEVEL	DISC	PROG.	23	8f	8g	8e	8d
8	1h	1a.e.f	1b.c	1d	24	8a	8b	8c	EDIT
9	2f	2g	2e	2d	25	9f	9g	9e	9d
10	2a	2b	2c	ST	26	9a	9b	9c	▶
11	3f	3g	3e	3d	27	OFF	ON	KHz	MHz
12	3a	3b	3c	TRACK	28	SIDE A	SIDE B	AM	PM
13	4f	4g	4e	4d	29	COM. 1			
14	4a	4b	4c	AUTO	30		COM. 2		
15	WIDE	FM	MW	LW	31			COM. 3	
16	CLOCK	1 (FM)	2 (FM)	AM	32				COM. 4

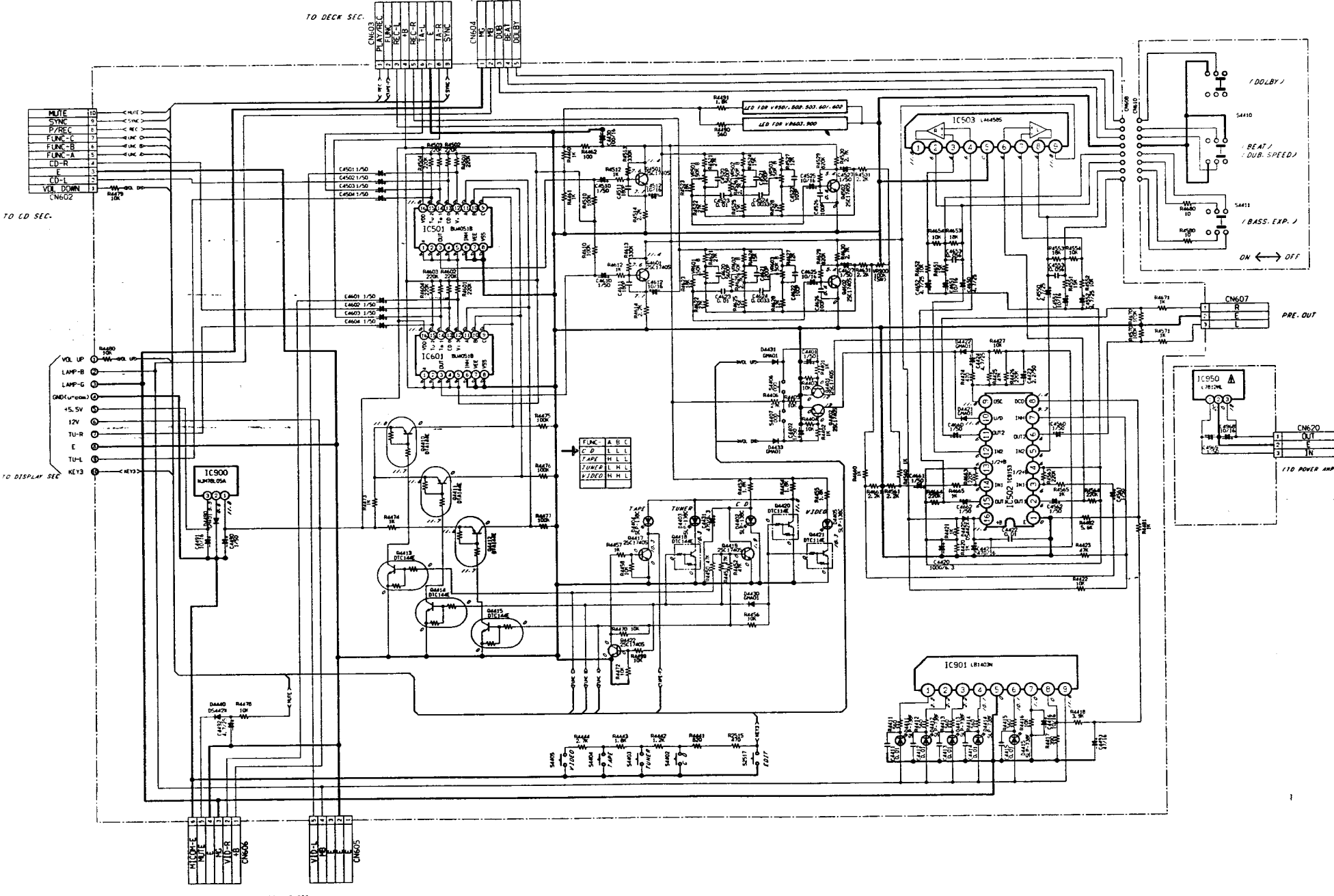
SCHEMATIC DIAGRAM (TUNER)

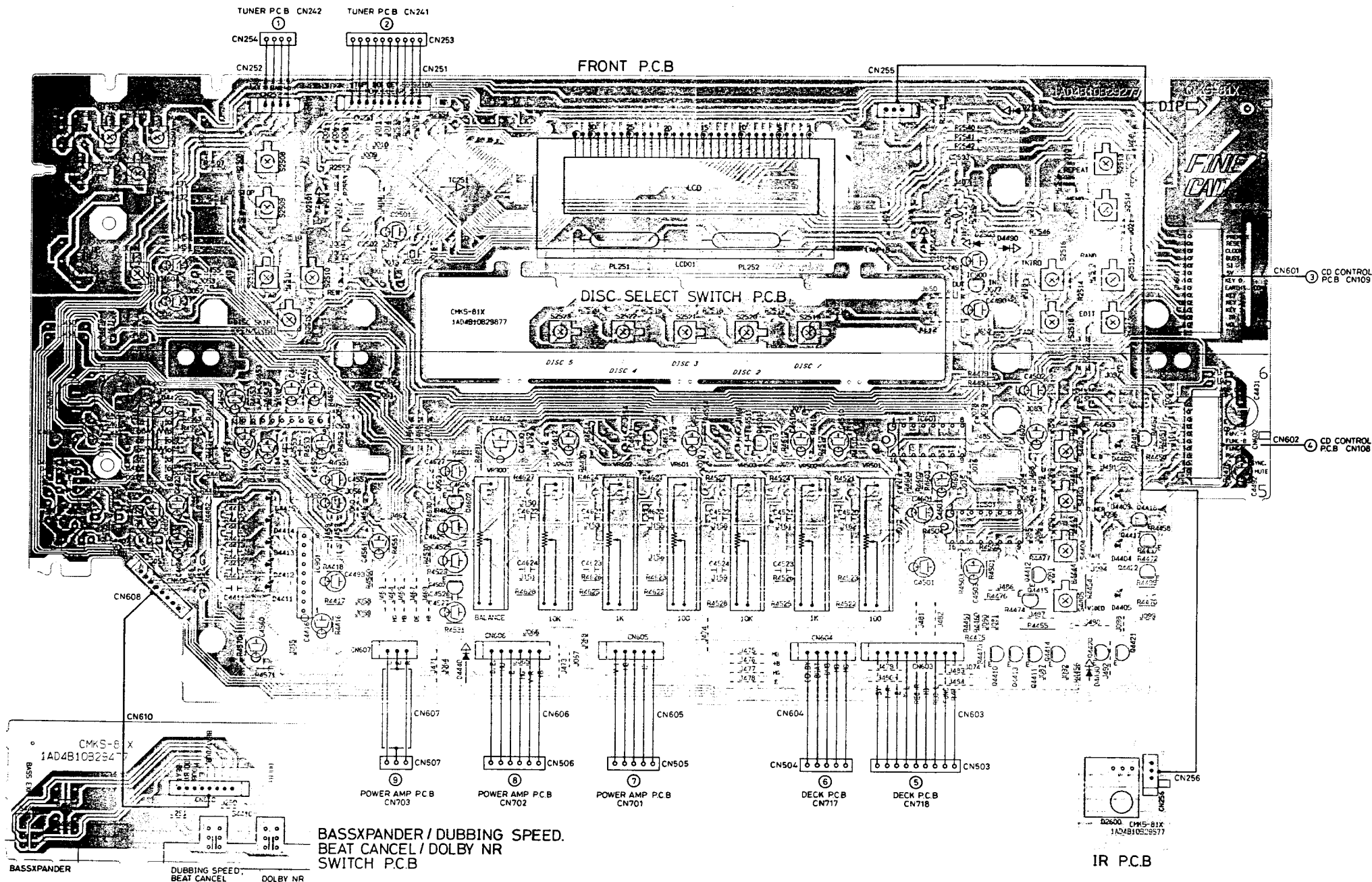


TUNER P.C.B

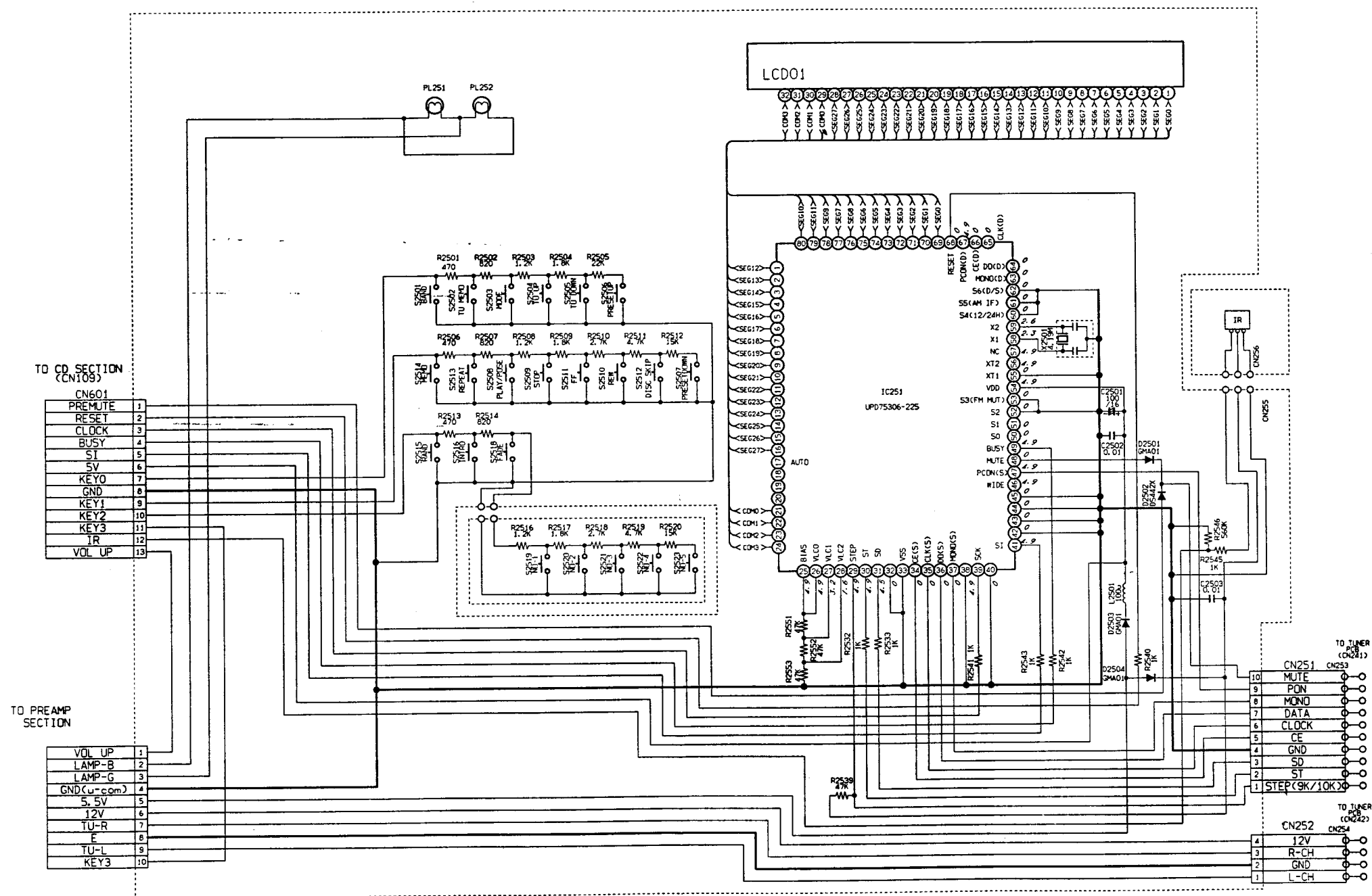


SCHEMATIC DIAGRAM (AMP. ①)





SCHEMATIC DIAGRAM (TUNER & CD CONTROL)



IC DESCRIPTION

IC251 μ PD75306GF-225-3B9 (MICRO PROCESSOR)

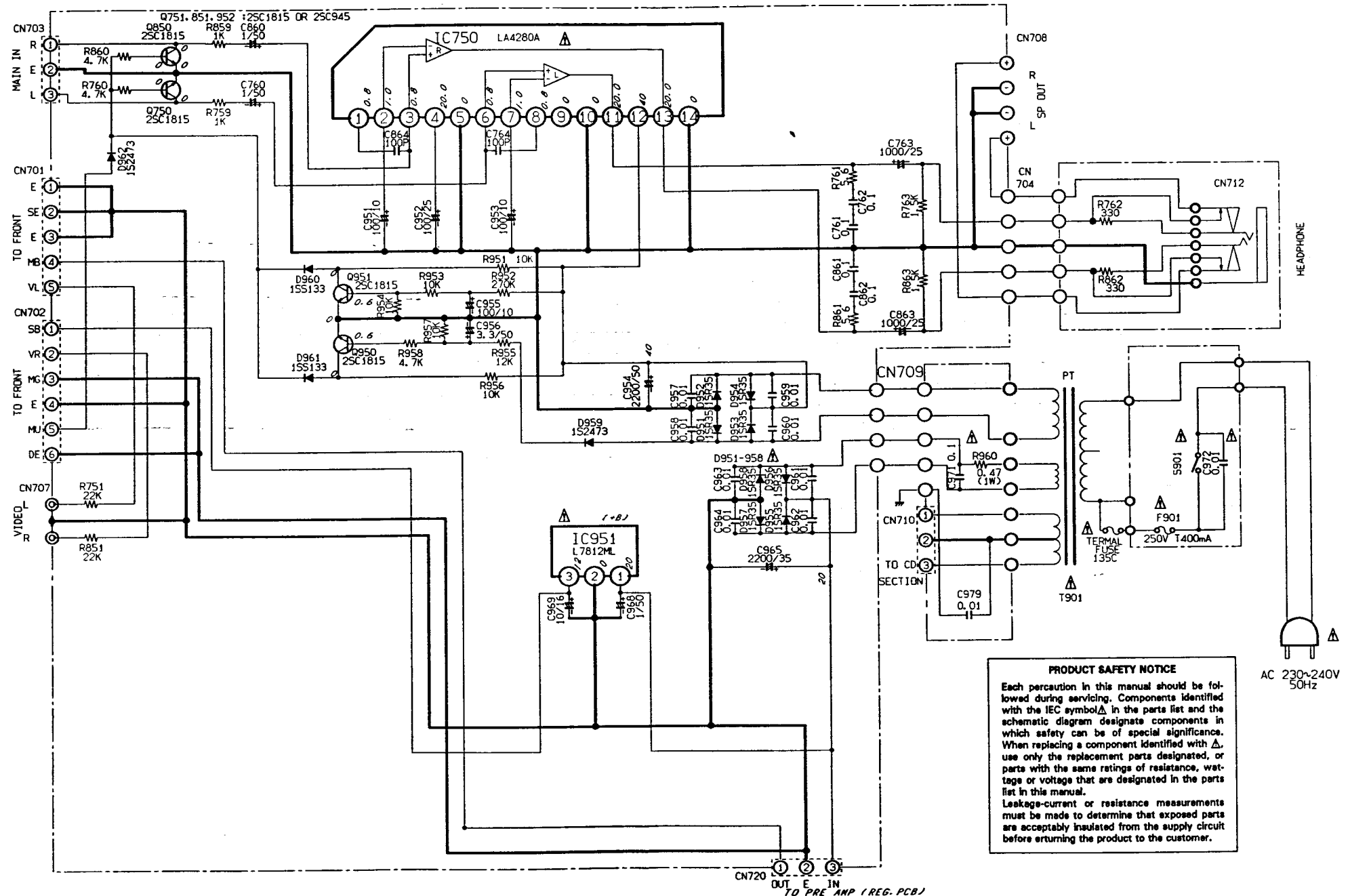
PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O	CONNECT
1	SEG12	S12	Segment of Liquid Crystal Display		LCD
2	SEG13	S13	Segment of Liquid Crystal Display		LCD
3	SEG14	S14	Segment of Liquid Crystal Display		LCD
4	SEG15	S15	Segment of Liquid Crystal Display		LCD
5	SEG16	S16	Segment of Liquid Crystal Display		LCD
6	SEG17	S17	Segment of Liquid Crystal Display		LCD
7	SEG18	S18	Segment of Liquid Crystal Display		LCD
8	SEG19	S19	Segment of Liquid Crystal Display		LCD
9	SEG20	S20	Segment of Liquid Crystal Display		LCD
10	SEG21	S21	Segment of Liquid Crystal Display		LCD
11	SEG22	S22	Segment of Liquid Crystal Display		LCD
12	SEG23	S23	Segment of Liquid Crystal Display		LCD
13	SEG24	S24/BP0	Segment of Liquid Crystal Display		LCD
14	SEG25	S25/BP1	Segment of Liquid Crystal Display		LCD
15	SEG26	S26/BP2	Segment of Liquid Crystal Display		LCD
16	SEG27	S27/BP3	Segment of Liquid Crystal Display		LCD
17	AUTO	S28/BP4	Auto Tuning Signal ACTIVE : HIGH LEVEL	O	TUNER
18	NC	S29/BP5	Not Used(Open)	O	OPEN
19	NC	S30/BP6	Not Used(Open)	O	OPEN
20	NC	S31/BP7	Not Used(Open)	O	OPEN
21	COM 0	COM0	Common of Liquid Crystal Display		LCD
22	COM 1	COM1	Common of Liquid Crystal Display		LCD
23	COM 2	COM2	Common of Liquid Crystal Display		LCD
24	COM 3	COM3	Common of Liquid Crystal Display		LCD
25	BIAS	BIAS	Bias of Liquid Crystal Display		
26	VLC0	VLC0	Power Supply for Drive of Liquid Crystal Display		
27	VLC1	VLC1	Power Supply for Drive of Liquid Crystal Display		
28	VLC2	VLC2	Power Supply for Drive of Liquid Crystal Display		
29	STEP	P40	AM Step Selection 9kHz (V_{DD}) / 10kHz (V_{SS})	I	TUNER
30	ST	P41	ST Signal ACTIVE : LOW LEVEL	I	TUNER
31	SD	P42	SD Signal ACTIVE : LOW LEVEL	I	TUNER
32	NC	P43	Not Used (Ground)	I	V_{SS}
33	VSS	V_{SS}	Ground		
34	SCE	P50	Data Signal from LM7001 (For S Series)	O	TUNER
35	SCL	P51	Data Signal from LM7001 (For S Series)	O	TUNER
36	SDO	P52	Data Signal from LM7001 (For S Series)	O	TUNER
37	S MONO	P53	Compulsion Monaural (For S Series) ACTIVE : HIGH LEVEL	O	TUNER
38	NC	P00/INT4	Not Used (Ground)	I	V_{SS}
39	SCK	P01/SCK	Clock Signal In from Main Micro Processor (μ PD65117)	I	MAIN μ CON
40	NC	P02/SO/SB0	Not Used (Ground)		V_{SS}

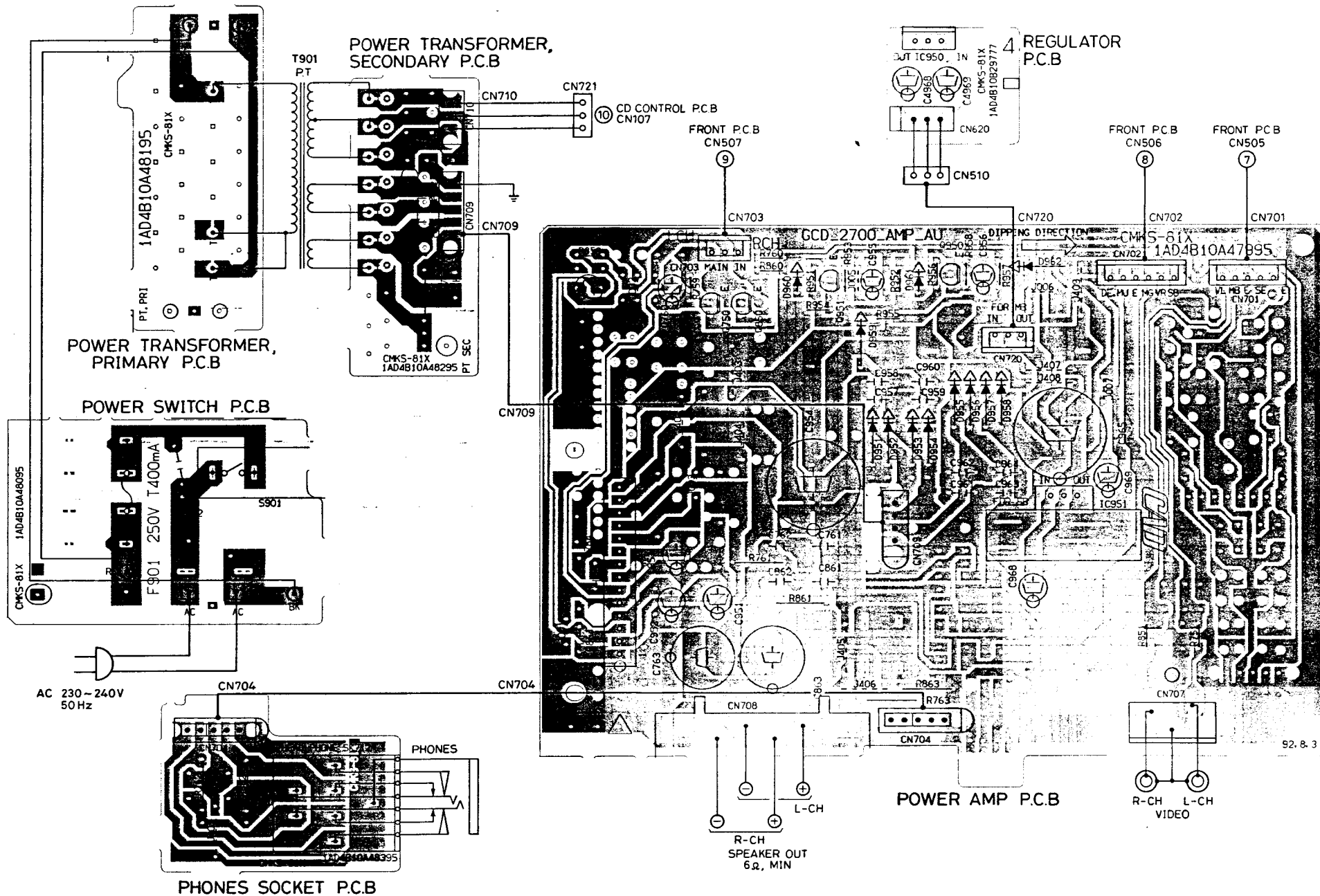
IC DESCRIPTION

IC251 μ PD75306

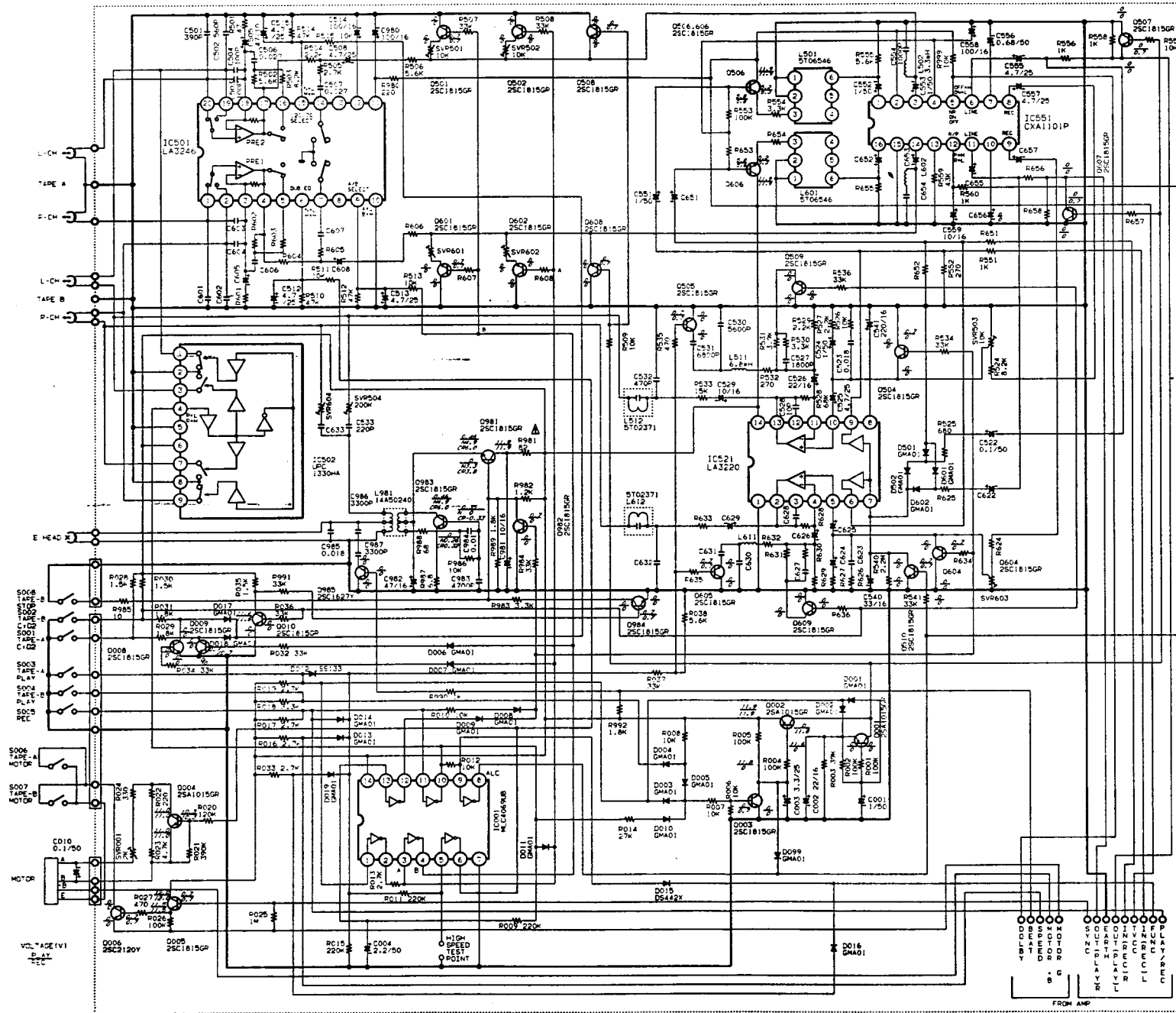
PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O	CONNECT
41	SI	P03/SI/SB1	Data In from Main Micro Processor (μ PD75112)	I	MAIN μ CON
42	NC	P10/INT0	Not Used (Ground)	I	V_{SS}
43	NC	P11/INT1	Not Used (Ground)	I	V_{SS}
44	NC	P12/INT2	Not Used (Ground)	I	V_{SS}
45	NC	P13/T10	Not Used (Ground)	I	V_{SS}
46	WIDE	P20/PT100	Select Signal for AM Signal Type Wide (HIGH) / Narrow (LOW)	O	TUNER
47	S PCON	P21	Tuner Power Signal (For S Series) ACTIVE : HIGH LEVEL	O	TUNER
48	MUTE	P22/PCL	Tuner Mute Signal ACTIVE : HIGH LEVEL	O	TUNER
49	BUSY	P23/BUZ	Busy Signal Out to Main Micro Processor (μ PD65117)	O	MAIN μ CON
50	S0	P30/LCDCL	Initial Set for User = Country (Open or Ground)	I	
51	S1	P31/SYNC	Initial Set for User = Country (Open or Ground)	I	
52	S2	P32	Initial Set for User = Country (Open or Ground)	I	
53	S3 (FM MUTE)	P33	Select Signal for FM Auto Mute SET (Open) / NOT (V_{SS})	I	
54	VDD	V_{DD}	Power Supply +5V		V_{DD}
55	NC	XT1	Not Used (Ground) OSC X'tal Terminal for Main Clock	I	V_{SS}
56	NC	XT2	Not Used (Open) OSC X'tal Terminal for Main Clock	O	
57	NC	NC	Non Connection		
58	X1	—	X'tal In (4.194304 MHz)	I	
59	X2	—	X'tal Out (4.194304 MHz)	O	
60	S4 (12H/24H)	P60/KR0	Select Signal for CLOCK 24H (Open) / 12H (V_{SS})	I	
61	S5 (AM IF)	P61/KR1	Select Signal for AM IF SET (Open) / NOT (V_{SS})	I	TUNER
62	S6 (D/S)	P62/KR2	Select Signal for D & S Series SET (Open) / NOT (V_{SS})	I	
63	D MONO	P63/KR3	Compulsion Monaural (For D Series) ACTIVE : HIGH LEVEL	O	TUNER
64	D DO	P70/KR4	Data Signal from LM7001 (For D Series)	O	TUNER
65	D CL	P71/KR5	Data Signal from LM7001 (For D Series)	O	TUNER
66	D CE	P72/KR6	Data Signal from LM7001 (For D Series)	O	TUNER
67	D PCON	P73/KR7	Tuner Power Signal (For D Series) ACTIVE : HIGH LEVEL	O	TUNER
68	RESET	RESET	System Reset Signal		RESET CIRCUIT
69	SEG0	S0	Segment of Liquid Crystal Display		LCD
70	SEG1	S1	Segment of Liquid Crystal Display		LCD
71	SEG2	S2	Segment of Liquid Crystal Display		LCD
72	SEG3	S3	Segment of Liquid Crystal Display		LCD
73	SEG4	S4	Segment of Liquid Crystal Display		LCD
74	SEG5	S5	Segment of Liquid Crystal Display		LCD
75	SEG6	S6	Segment of Liquid Crystal Display		LCD
76	SEG7	S7	Segment of Liquid Crystal Display		LCD
77	SEG8	S8	Segment of Liquid Crystal Display		LCD
78	SEG9	S9	Segment of Liquid Crystal Display		LCD
79	SEG10	S10	Segment of Liquid Crystal Display		LCD
80	SEG11	S11	Segment of Liquid Crystal Display		LCD

SCHEMATIC DIAGRAM (AMP.)





SCHEMATIC DIAGRAM (TAPE DECK)



PLAY...TAPE B PLAY
REC...TAPE B REC

IC501	VOL	PLAY	REC	OTHER
1	0	0	0	
2	0	0	0	
3	0.59	0.59	0	
4	4.4	4.4	0	
5	4.4	4.4	0	
6	0	0	5.9(1.0B)	
7	0	0	0	
8	4.4	4.4	0	(O)TAPE & PLAY
9	5.9	5.9	0	
10	0	0	0	
11	9.7	9.7	0	
12	9.7	9.7	0	
13	4.4	4.4	0	
14	0	0	0	
15	0	0	5.9(1.02)	
16	4.4	4.4	0	
17	4.4	4.4	0	
18	0.59	0.59	0	
19	0	0	0	
20	0	0	0	

S001 TAPE A SELECT SW "C102"
S002 TAPE B SELECT SW "C102"
S003 TAPE A PLAY SW "OFF"
S004 TAPE B PLAY SW "OFF"
S005 TAPE A REC SW "OFF"
S006 TAPE B REC SW "OFF"
S007 TAPE A MOTOR SW "OFF"
S008 TAPE B STOP SW "OFF"

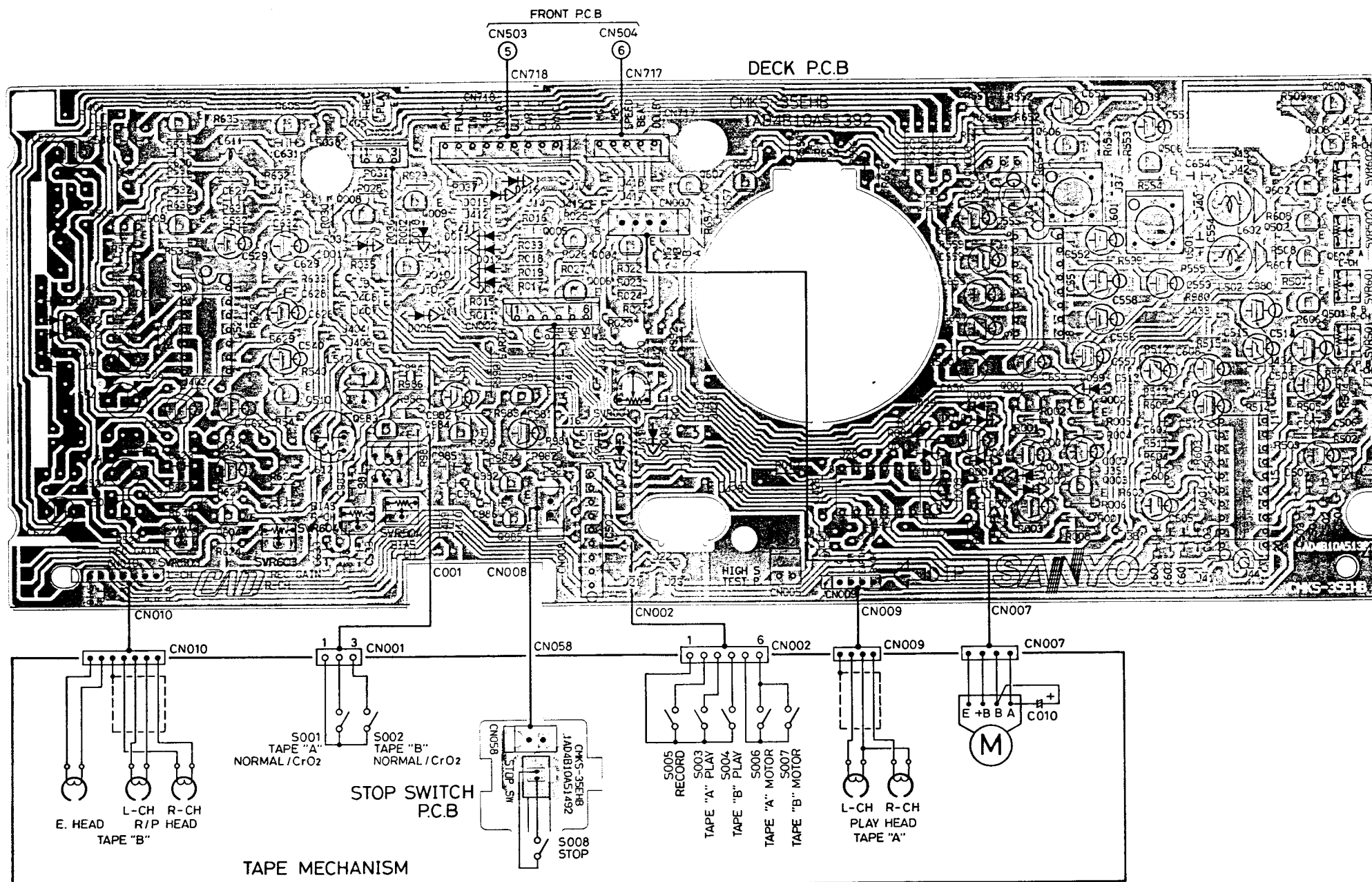
IC502	VOL	PLAY	REC	OTHER
1	0	0	0	
2	0	0	0	
3	0	0	0	
4	0	0	0	
5	0	0	0	
6	0	0	0	
7	0	0	0	
8	0	0	0	
9	0	0	0	
10	0	0	0	
11	0	0	0	
12	0	0	0	
13	0	0	0	
14	0	0	0	
15	0	0	0	
16	0	0	0	

IC521	VOL	PLAY	REC	OTHER
1	0	0	0	
2	0.59	0.59	0	
3	11.2	11.2	0	
4	5.9	5.9	0	
5	5.9	5.9	0	
6	0	0	0	
7	0	0	0	
8	5.9	5.9	0	1.15(1.02) (D)ING
9	0	0	0	
10	5.9	5.9	0	
11	5.9	5.9	0	
12	11.2	11.2	0	
13	5.9	5.9	0	
14	11.9	11.9	0	

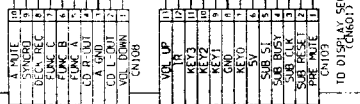
IC503	VOL	PLAY	REC	OTHER
1	6.0	6.0	0	
2	11.9	11.9	0	
3	6.0	6.0	0	
4	6.0	6.0	0	
5	11.9	11.9	0	(O) (D) BY (D)N
6	6.1	6.1	0	
7	0.4	0.4	0	
8	6.1	6.1	0	
9	6.1	6.1	0	
10	0.4	0.4	0	
11	6.1	6.1	0	
12	11.8	0	0	(P) (H) (C) (T) (S) (B) (S)
13	1.2	1.2	0	
14	6.0	6.0	0	
15	0	0	0	
16	6.0	6.0	0	

COMMON USE

D001 002 003 004 005 006
D007 008 009 010 011 012
D013 014 015 016 017 018 019
D021 022 023 024 025 026
D027 028 029 030 031 032
D033 034 035 036 037 038
D039 040 041 042 043 044
D045 046 047 048 049 050
D051 052 053 054 055 056
D057 058 059 060 061 062
D063 064 065 066 067 068
D069 070 071 072 073 074
D075 076 077 078 079 080
D081 082 083 084 085 086
D087 088 089 090 091 092
D093 094 095 096 097 098
D099 100 101 102 103 104
D105 106 107 108 109 110
D111 112 113 114 115 116
D117 118 119 120 121 122
D123 124 125 126 127 128
D129 130 131 132 133 134
D135 136 137 138 139 140
D141 142 143 144 145 146
D147 148 149 150 151 152
D153 154 155 156 157 158
D159 160 161 162 163 164
D165 166 167 168 169 170
D171 172 173 174 175 176
D177 178 179 180 181 182
D183 184 185 186 187 188
D189 189 190 191 192 193
D195 194 195 196 197 198
D199 199 200 201 202 203
D205 204 205 206 207 208
D211 209 210 211 212 213
D217 214 215 216 217 218
D223 219 220 221 222 223
D229 224 225 226 227 228
D235 229 230 231 232 233
D241 234 235 236 237 238
D247 239 240 241 242 243
D253 244 245 246 247 248
D259 249 250 251 252 253
D265 254 255 256 257 258
D271 259 260 261 262 263
D277 264 265 266 267 268
D283 269 270 271 272 273
D289 274 275 276 277 278
D295 279 280 281 282 283
D301 284 285 286 287 288
D307 289 290 291 292 293
D313 294 295 296 297 298
D319 299 300 301 302 303
D325 304 305 306 307 308
D331 309 310 311 312 313
D337 314 315 316 317 318
D343 319 320 321 322 323
D349 324 325 326 327 328
D355 329 330 331 332 333
D361 334 335 336 337 338
D367 339 340 341 342 343
D373 344 345 346 347 348
D379 349 350 351 352 353
D385 354 355 356 357 358
D391 359 360 361 362 363
D397 364 365 366 367 368
D403 369 370 371 372 373
D409 374 375 376 377 378
D415 379 380 381 382 383
D421 384 385 386 387 388
D427 389 390 391 392 393
D433 394 395 396 397 398
D439 399 400 401 402 403
D445 404 405 406 407 408
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D457 414 415 416 417 418
D463 419 420 421 422 423
D469 424 425 426 427 428
D475 429 430 431 432 433
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D541 484 485 486 487 488
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D553 494 495 496 497 498
D559 499 500 501 502 503
D565 504 505 506 507 508
D571 509 510 511 512 513
D577 514 515 516 517 518
D583 519 520 521 522 523
D589 524 525 526 527 528
D595 529 530 531 532 533
D601 534 535 536 537 538
D607 539 540 541 542 543
D613 544 545 546 547 548
D619 549 550 551 552 553
D625 554 555 556 557 558
D631 559 560 561 562 563
D637 564 565 566 567 568
D643 569 570 571 572 573
D649 574 575 576 577 578
D655 579 580 581 582 583
D661 584 585 586 587 588
D667 589 590 591 592 593
D673 594 595 596 597 598
D679 599 600 601 602 603
D685 604 605 606 607 608
D691 609 610 611 612 613
D697 614 615 616 617 618
D703 619 620 621 622 623
D709 624 625 626 627 628
D715 629 630 631 632 633
D721 634 635 636 637 638
D727 639 640 641 642 643
D733 644 645 646 647 648
D739 649 650 651 652 653
D745 654 655 656 657 658
D751 659 660 661 662 663
D757 664 665 666 667 668
D763 669 670 671 672 673
D769 674 675 676 677 678
D775 679 680 681 682 683
D781 684 685 686 687 688
D787 689 690 691 692 693
D793 694 695 696 697 698
D799 699 700 701 702 703
D805 704 705 706 707 708
D811 709 710 711 712 713
D817 714 715 716 717 718
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D835 729 730 731 732 733
D841 734 735 736 737 738
D847 739 740 741 742 743
D853 744 745 746 747 748
D859 749 750 751 752 753
D865 754 755 756 757 758
D871 759 760 761 762 763
D877 764 765 766 767 768
D883 769 770 771 772 773
D889 774 775 776 777 778
D895 779 780 781 782 783
D901 784 785 786 787 788
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D919 799 800 801 802 803
D925 804 805 806 807 808
D931 809 810 811 812 813
D937 814 815 816 817 818
D943 819 820 821 822 823
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D955 829 830 831 832 833
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D967 839 840 841 842 843
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D1159 999 1000 1001 1002 1003
D1165 1004 1005 1006 1007 1008
D1171 1009 1010 1011 1012 1013
D1177 1014 1015 1016 1017 1018
D1183 1019 1020 1021 1022 1023
D1189 1024 1025 1026 1027 1028
D1195 1029 1030 1031 1032 1033
D1201 1034 1035 1036 1037 1038
D1207 1039 1040 1041 1042 1043
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D1219 1049 1050 1051 1052 1053
D1225 1054 1055 1056 1057 1058
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D1237 1064 1065 1066 1067 1068
D1243 1069 1070 1071 1072 1073
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D1273 1094 1095 1096 1097 1098
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D1285 1104 1105 1106 1107 1108
D1291 1109 1110 1111 1112 1113
D1297 1114 1115 1116 1117 1118
D1303 1119 1120 1121 1122 1123
D1309 1124 1125 1126 1127 1128
D1315 1129 1130 1131 1132 1133
D1321 1134 1135 1136 1137 1138
D1327 1139 1140 1141 1142 1143
D1333 1144 1145 1146 1147 1148
D1339 1149 1150 1151 1152 1153
D1345 1154 1155 1156 1157 1158
D1351 1159 1160 1161 1162 1163
D1357 1164 1165 1166 1167 1168
D1363 1169 1170 1171 1172 1173
D1369 1174 1175 1176 1177 1178
D1375 1179 1180 1181 1182 1183
D1381 1184 1185 1186 1187 1188
D1387 1189 1190 1191 1192 1193
D1393 1194 1195 1196 1197 1198
D1399 1199 1200 1201 1202 1203
D1405 1204 1205 1206 1207 1208
D1411 1209 1210 1211 1212 1213
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D1453 1244 1245 1246 1247 1248
D1459 1249 1250 1251 1252 1253
D1465 1254 1255 1256 1257 1258
D1471 1259 1260 1261 1262 1263
D1477 1264 1265 1266 1267 1268
D1483 1269 1270 1271 1272 1273
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D1513 1294 1295 1296 1297 1298
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D1531 1309 1310 1311 1312 1313
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D1549 1324 1325 1326 1327 1328
D1555 1329 1330 1331 1332 1333
D1561 1334 1335 1336 1337 1338
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D1585 1354 1355 1356 1357 1358
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D1645 1404 1405 1406 1407 1408
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D1675 1429 1430 1431 1432 1433
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D1687 1439 1440 1441 1442 1443
D1693 1444 1445 1446 1447 1448
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D1705 1454 1455 1456 1457 1458
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D1717 1464 1465 1466 1467 1468
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D1765 1504 1505 1506 1507 1508
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D1819 1549 1550 1551 1552 1553
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D1837 1564 1565 1566 1567 1568
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D1885 1604 1605 1606 1607 1608
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D1915 1629 1630 1631 1632 1633
D1921 1634 1635



SCHEMATIC DIAGRAM (CD)

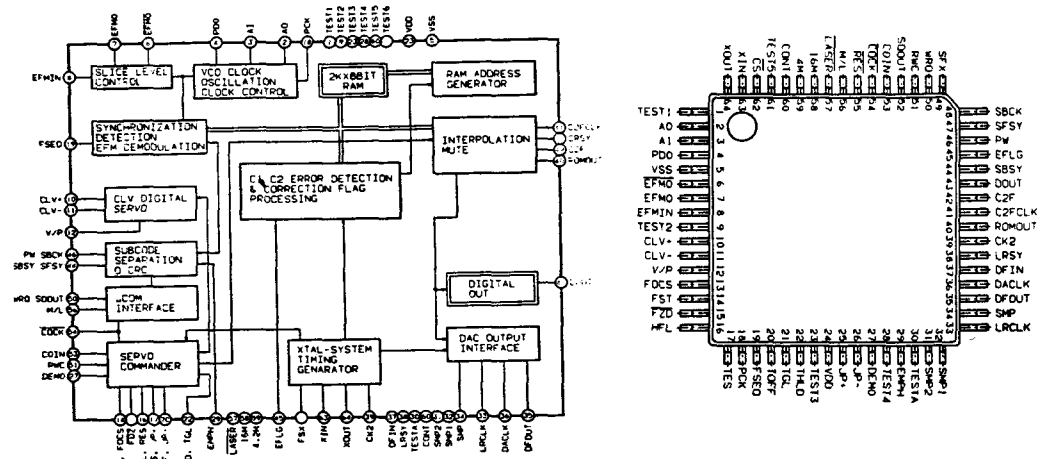


μPD75112GF-751-3BE (MICRO PROCESSOR)

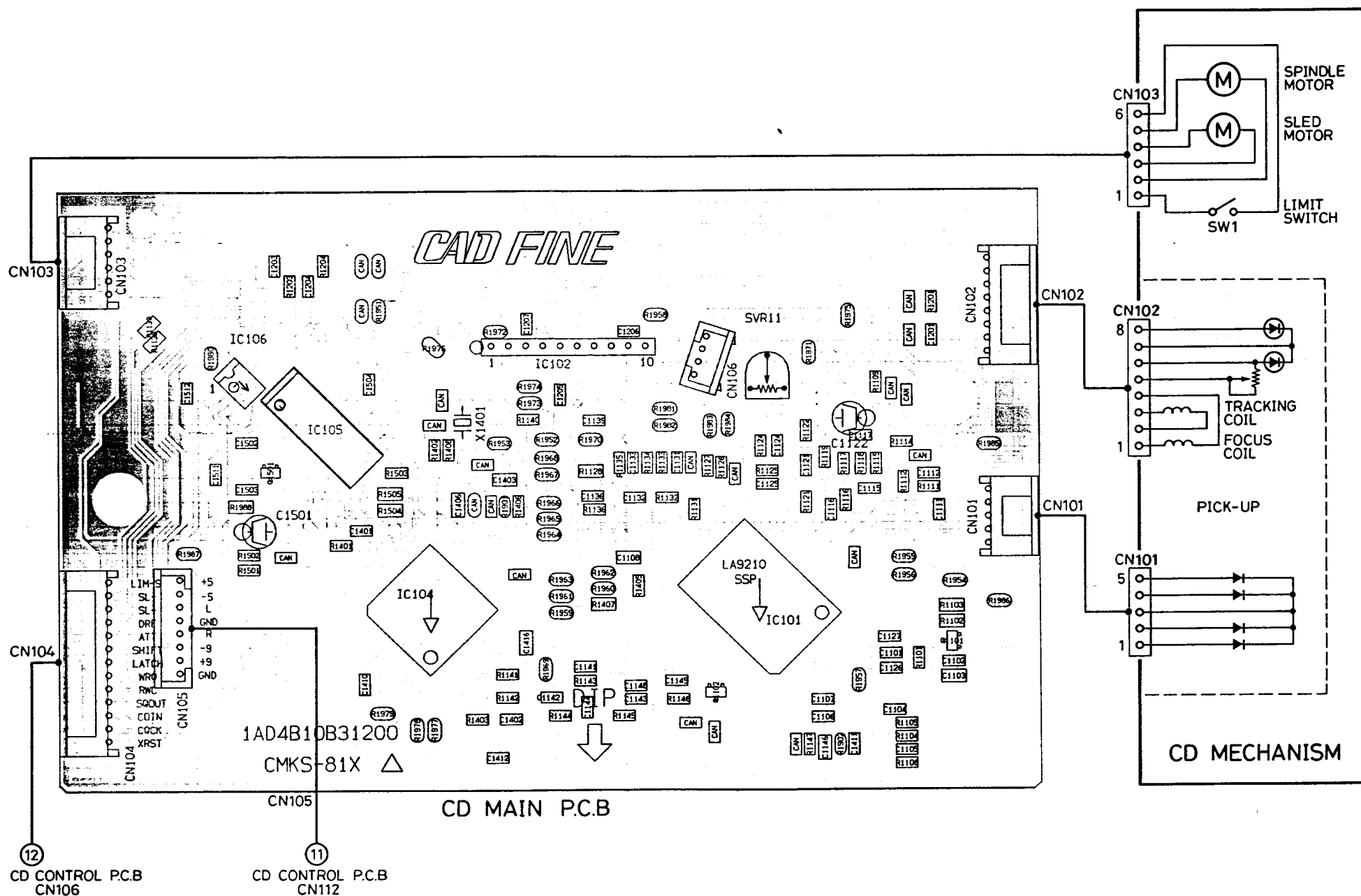
SIGNAL NAME	PORT NAME	DESCRIPTION	I/O	PIN No.	SIGNAL NAME	PORT NAME	DESCRIPTION	I/O
CD MUTE	P41	CD Mute Output	O	35	THLD	T10	THLD Input	I
P CON	P40	"H" Level at Power ON	O	36	NC	T11	Not Used (Open)	I
NC	P53	Not Used (Open)	O	37	SLED OUT	P23	SLED Outer Direction Output "H" Active	O
FUNC C	P52	Function Control C Signal	O	38	NC	P22	Not Used (Open)	O
FUNC B	P51	Function Control B Signal	O	39	SLED IN	P21	Sled Output to Inner Way "H" Active	O
FUNCA	P50	Function Control A Signal	O	40	RWC	P20	RWC Output to LC7860N	O
RESET	RESET	System Reset	I	41	SQOUT	P03/S1	SQOUT Input from LC7860N	I
X2		X'tal Oscillator Connect at 4.19 MHz		42	COIN	P02 /SO	COIN Output to LC7860N	O
X1		X'tal Oscillator Connect at 4.19 MHz		43	CQCK	P01 / SCK	CQCK Output to LC7860N	O
CRECLP	P63	Output of Record Compilation is in Progress	O	44	DRF	P00 / INT4	DRE Signal Input from LA9200N	I
POWER	P62	Power ON ("H" Position) Output	O	45	SW3	P123	Mechanism Switch 3 Input	I
PLAY P	P61	At Playback "L"	O	46	SW2	P122	Mechanism Switch 2 Input	I
STOP P	P60	At Stop "L"	O	47	SW1	P121	Mechanism Switch 1 (Limit SW) Input	I
PULL UP	P73	At Stand-by (Power Stoopage) "L"	O	48	SENSOR	P120	Mechanism Sensor Input	I
SYNCR0	P72	Synco Output	O	49	POWER	P133	Power ON ("H") Input	I
VOL UP	P71	Volume Up	O	50	REC SW	P132	Tape Rec. Switch (Rec. Key On "H")	I
VOL DOWN	P70	Volume Down	O	51	DIREC	P131	Tape Play Direction (Edge Detection)	I
A MUTE	P83	Analogue Audio Mute Output "L" Active	O	52	NC	P130	Not Used (Open)	I
TABLE V	P82	Motor Voltage of Tray Rotation "L" Active	O	53	DAC SEL	P143	Select Signal from ON/OFF Switch for DAC (Digital to Analogue Converter)	I
TABLE	P81	Disc Table rotation "L" Active	O	54	HISEL	P142	Select Signal for High Speed Access	I
MECHA B	P80	Mechanism Base Up/Down "L" Active	O	55	FUNC SEL	P141	Select Signal for Remocon Function	I
PRE MUTE	P93	Tuner Pre Mute Output "Active"	O	56	REC SEL	P140	Select the play Key Valid of the End of A Side when Record Compilation	I
CLV G	P92	CLV Gain	O	57	NC	NC	Not Connection	
SUB SO	P91	Data Out to Tuner Micro Processor (μPD75306)	O	58	VDD	VDD	Power Supply +5V	
SUB CLK	P90	Clock Out to Tuner Micro Processor (μPD75306)	O	59	NC	P33	Not Used (Open)	O
VSS	—	Ground		60	CD FUNC	P32	CD Function Output	O
SUB BUSY	P13	Busy Signal In from Sub Micro Processor (μPD75306)	I	61	DSP RESET	P31	Reset Control Signal for DSP (Digital Signal Processor)	O
V CHK	P12	Electricity Failure Detector	I	62	ATT	P30	DAC (Digital to Analogue Converter) Interface [Data]	O
WRQ	P11	WRQ Input from LC7860N	I	63	SHIFT	P43	DAC (Digital to Analogue Converter) Interface [Clock]	O
IR	P10	Infrared Ray Receiving (Remocon) Signal	I	64	LATCH	P42	DAC (Digital to Analogue Converter) Interface [Latch]	O
KEY3	PTH03	Key Input Analogue Signal	I					
KEY2	PTH02	Key Input Signal	I					
KEY1	PTH01	Key Input Analogue Signal	I					
KEY0	PTH00	Key Input Analogue Signal	I					

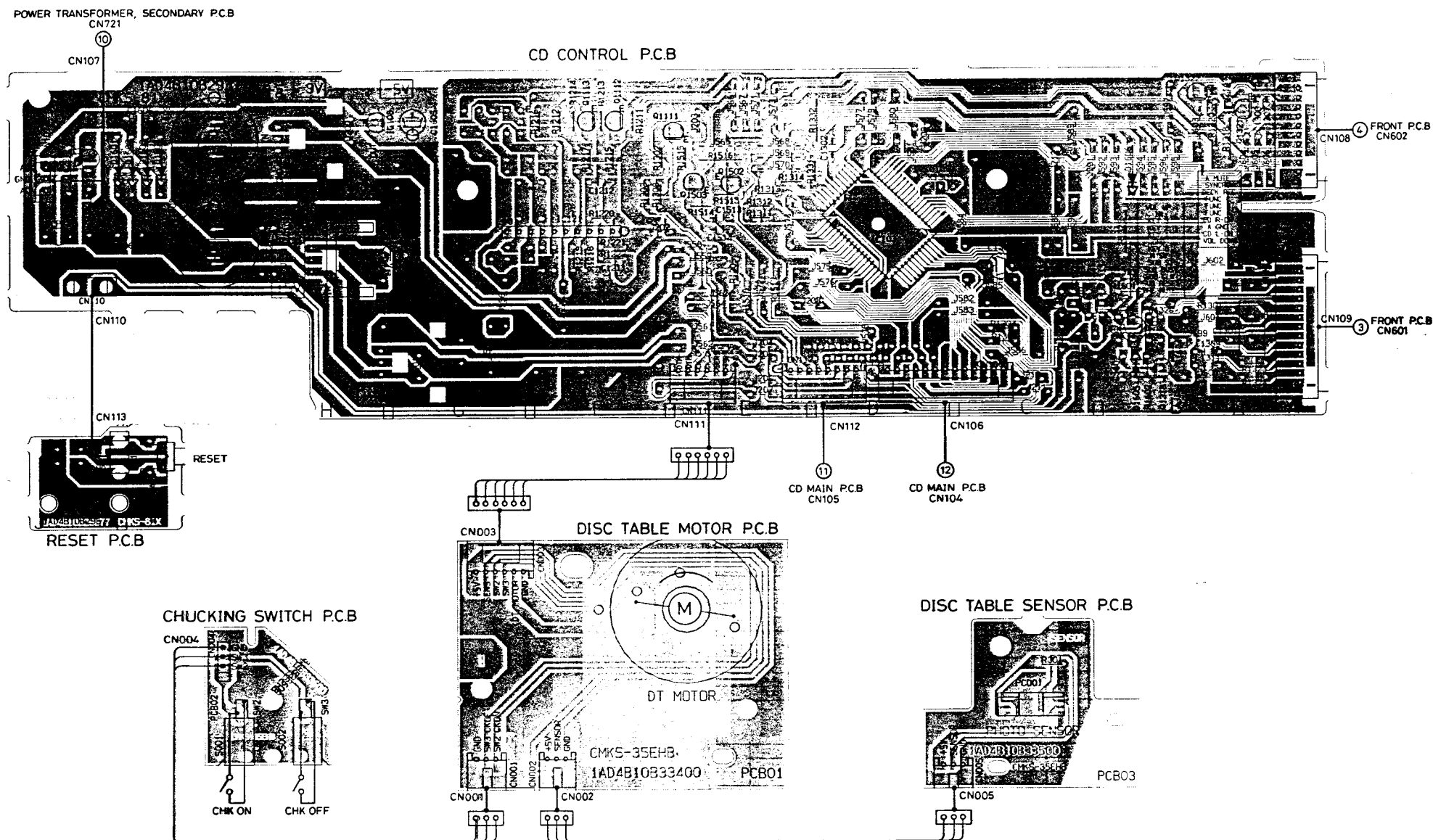
IC BLOCK DAIGRAM & DDESCRIPTION

IC104 LC7866E (DIGITAL SIGNAL PROCESSOR)



No	PIN NAME	I/O	DESCRIPTION	No	PIN NAME	I/O	DESCRIPTION
1	TEST1	I	For TEST. Normal time is non connection.	31	SMP2	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
2	AO	O	Input from VCO output in LA9210 (8.6436MHz)	32	SMP1	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
3	AI	I	Phase comparison output of VCO and EFM signal.	33	LRCLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
4	PDO	O		34	SMP	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
5	VSS		GND	35	DFOUT	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
6	EFMO	O	Negative output through amplitude limiter. Antiphase of EFM0. This signal use SLICE LEVEL CONTROL.	36	DACLK	O	Output of signal to DAC, Signal of Latch & L/R select, Signal for Sampling Hold
7	EFMO	O	Positive output through amplitude limiter. Antiphase of EFM0. This signal use SLICE LEVEL CONTROL.	37	TESTB	O	For TEST. Normal time is non connection.
8	EFMIN	I	Inputting HF signal of 1~2Vp.p. This signal use SLICE LEVEL CONTROL.	38	TESTC	O	For TEST. Normal time is non connection.
9	TEST2	I	For TEST. Normal time is non connection.	39	CK2	O	For output of signal that Comply with CD-ROM
10	CLV+	O	Output for DISC MOTOR CONTROL.	40	ROMOUT	O	For output of signal that Comply with CD-ROM
11	CLV-	O	Output for DISC MOTOR CONTROL.	41	C2FLCK	O	For output of signal that Comply with CD-ROM
12	V/P	O	CLV rough Servo time : Output "H" Phase control time : Output "L"	42	C2F	O	For output of signal that Comply with CD-ROM
13	FOCS	O	Output "H" : Lens pull up with slowly than stop the Focus Servo. If FZD generate, it reset output of FOCS. For lead-in of Focus	43	DOUT	O	Output of DIGITAL OUT
14	FST	O		44	SBSY	O	Synchronizing signal of sub-code block.
15	FZD	I		45	EFLG	O	For correction monitor of C1, C2, single, double.
16	HFL	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).	46	PW	O	SFSY is Synchronizing signal of sub-code & frame. Clock of eighth send to SBCK then read out the sub-code of P, Q, R, S, T, U, V, & W.
17	TES	I	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).	47	SFSY	O	
18	PCK	O	PCK Monitor (4.3218MHz)	48	SBCK	I	
19	FSEQ	O	SYNC (F5 of truth) detected from EFM signal = SYNC of counter : "H" (Latch Output during in 1 frame)	49	FSX	O	Output of Synchronizing signal (7.35KHz)
20	TOFF	O		50	WRQ	O	Data sub-code Q pass the CRC check then WRQ do "H". It detect at external. Data read out from SOOUT by send the CQCK. RWC set the "H" by Micro Processor then it let command by send with Synchronizing CQCK command data.
21	TGL	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).	51	RWC	I	
22	THLD	O		52	SOOUT	O	
23	TEST3	I	For TEST. Normal time is non connection.	53	COIN	I	
24	VDD		+5V	54	CQCK	I	
25	JP+	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).	55	RES	I	Turn on the Power Supply time : Once "L"
26	JP-	O	Comply with command of track jump, it oscillate kick Pulse, JP+ & JP-. It jump the prescribed number of track (1,4,16,64).	56	M/L	I	Data of SOOUT want at the LBS first time : M/L set the "L".
27	DEMO	I	For adjustment of production process. Sound on function.	57	LASER	O	This output can control at Serial Control from Micro Processor
28	TEST4	I	For TEST. Normal time is non connection.	58	16M	O	16M Output (16.9344MHz)
29	EMPH	O	Output is "H" time, it need de-emphasis	59	4M	O	4M Output (4.2336MHz)
30	TESTA	I	For TEST. Normal time is "H".	60	CONT	O	This output can control at Serial Control from Micro Processor
				61	TEST5	I	For TEST. Normal time is non connection.
				62	CS	I	Chip select Terminal. This terminal "L" : LC7866 is active (Internal Resistor : Pull Down)
				63	XIN	I	Connection Terminal of crystal oscillation (16.9344MHz)
				64	XOUT	O	Connection Terminal of crystal oscillation (16.9344MHz)





IC & TRANSISTOR VOLTAGES (CD)

(V)

IC101 LA9210M

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop	0	-5.0	0	0	0	0	0	0	0	2.4	2.6	2.6	0	0	0	0
Play	0	-5.0	0	0	0	0	0	0	0	2.4	2.6	2.6	0	0	0	0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop	0	0	0	0	0	0	0	0	0	0	0.7	2.4	0	0	0	-5.0
Play	0	0	0	0	0	0	0	0	0	0	0.4	2.4	-1.0	0	0.6	-5.0
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop	0	0	0	5.0	5.0	0	0	0	0	0	0	5.0	5.0	4.1	4.1	0
Play	0	0	0	5.0	5.0	0	0	0	0	0	0	5.0	5.0	4.1	4.1	0
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop	4.1	0	0	0	2.5	2.5	2.5	5.0	2.5	2.5	4.1	2.7	2.4	5.0	0	0
Play	4.1	0	0	1.4	2.5	2.5	2.5	5.0	2.5	2.5	4.1	2.7	2.4	5.0	0	0
Pin No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Stop	0	0.4	-0.3	0	-0.35	-0.35	0	-0.35	0	4.9	-5.0	4.9	5.0	0	0	0
Play	0	0	0	0	0	0	0	0	0	0	0	5.0	0	0	0	0

IC102 LC6524

Pin No.	1	2	3	4	5	6	7	8	9	10
Stop	0	0	-11.0	0	0	0	0	10.8	0	0
Play	0	0	-10.8	0	0	0	0	10.5	0	-0.3

Fluc : Fluctuation

IC103 UPD75112

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop	4.7	4.8	0	0	0	0	4.8	2.3	2.3	4.8	4.8	4.8	0.3	4.8	0	0
Play	0	4.8	0	0	0	0	4.8	2.3	2.3	4.8	4.8	4.8	0	4.8	0	0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop	0	0	4.8	4.8	4.8	0	0	4.8	0	0	4.8	4.8	0	5.0	4.8	4.8
Play	0	0	4.8	4.8	4.8	0	0	4.8	0	0	4.8	4.8	0.3	5.0	4.8	4.8
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop	4.8	4.8	5.0	5.0	0	0	0	0	0	0	0	0	5.0	0	5.0	5.0
Play	4.8	4.8	5.0	5.0	0	0	0	0	0	0	0	0	4.8	4.2	5.0	5.0
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop	5.0	0	0	5.0	5.0	0	5.0	5.0	5.0	4.8	4.8	0	0	0	4.8	4.8
Play	5.0	0	0	5.0	5.0	0	5.0	5.0	5.0	4.8	4.8	0	0	0	4.8	4.8

IC104 LC7866E

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop	0	2.3	2.3	2.5	0	2.4	2.5	2.5	0	0	0	5.0	0	2.5	4.1	4.1
Play	0	2.3	2.3	2.9	0	2.5	2.5	2.5	0	1.4	0	0	0	2.5	4.1	0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Stop	4.1	2.3	0	5.0	5.0	0	0	5.0	0	0	0	0	0	5.0	1.25	1.25
Play	1.3	2.3	5.0	0	5.0	0	0	5.0	0	0	0	0	0	5.0	1.25	1.25
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Stop	2.5	2.5	0	2.5	0	2.5	2.5	1.6	2.5	4.5	2.5	0.1	2.3	0	2.5	1.3
Play	2.5	2.5	2.5	2.5	0	2.5	2.5	1.6	2.5	0	0	0	0	0.1	2.5	1.3
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Stop	2.5	0	0	0	0	0	0	0	5.0	1.6	2.4	5.0	0	0	2.3	2.5
Play	2.5	0.3	0	0	0	0	0	0	1.5	2.4	5.0	0	0	0	2.3	2.5

IC105 LC7883KM

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Stop	2.0	4.0	5.0	5.0	2.5	0	2.5	0	0	4.8	4.8	5.0	0	0	0	0
Play	2.0	4.0	5.0	5.0	2.5	2.5	2.5	0	0	4.8	4.8	5.0	0	0	0	0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28				
Stop	0	0	0	0	0	0	1.4	1.3	1.9	0	0	2.0				
Play	0	0	0	0	0	0	1.4	1.3	1.9	0	0	2.0				

IC & TRANSISTOR VOLTAGES (CD)

(V)

IC106 XRA15218F

Pin No.	1	2	3	4	5	6	7	8
Stop	2.0	2.0	2.0	-5.0	2.0	2.0	2.0	5.0
Play	2.0	2.0	2.0	-5.0	2.0	2.0	2.0	5.0

IC107 M5278SD05

Pin No.	1	2	3
Stop	10.8	5.0	0
Play	10.5	5.0	0

IC108 NJM97L05

Pin No.	1	2	3
Stop	-11.0	-5.0	0
Play	-10.8	-5.0	0

IC121 LA6510

Pin No.	1	2	3	4	5	6	7	8	9	10
Stop	0	0	0.3	0.3	-11.0	0	0	-0.4	0	10.8
Play	0	0	0.3	0.3	-10.8	0	0	-0.4	0	10.5

TRANSISTOR

(V)

Transistor No.	Q1101			Q1103			Q1111			Q1112		
Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop	5.0	0	2.9	2.5	2.7	2.5	4.7	4.7	4.0	0	0	4.8
Play	3.6	2.0	0	2.5	2.7	2.5	0	-5.0	0	0	0	4.8
Transistor No.	Q1113			Q1311			Q1312			Q1313		
Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop	0	0	4.8	4.8	4.8	4.2	0	0	0.6	0	4.8	0
Play	0	5.0	4.8	4.8	4.8	4.2	0	0	0.6	0	4.8	0
Transistor No.	Q1321			Q1322			Q1501			Q1502		
Pin Name	E	C	B	E	C	B	E	C	B	E	C	B
Stop	0	0	10.5	0	4.8	0	4.0	5.0	4.7	0	0	0.7
Play	0	0	10.5	0	4.8	0	4.0	5.0	4.7	0	0	-5.0
Transistor No.	Q1503											
Pin Name	E	C	B									
Stop	0	0	0.7									
Play	0	0	-5.0									

SANYO

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